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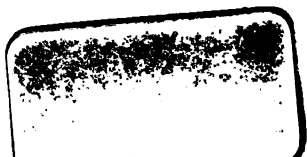
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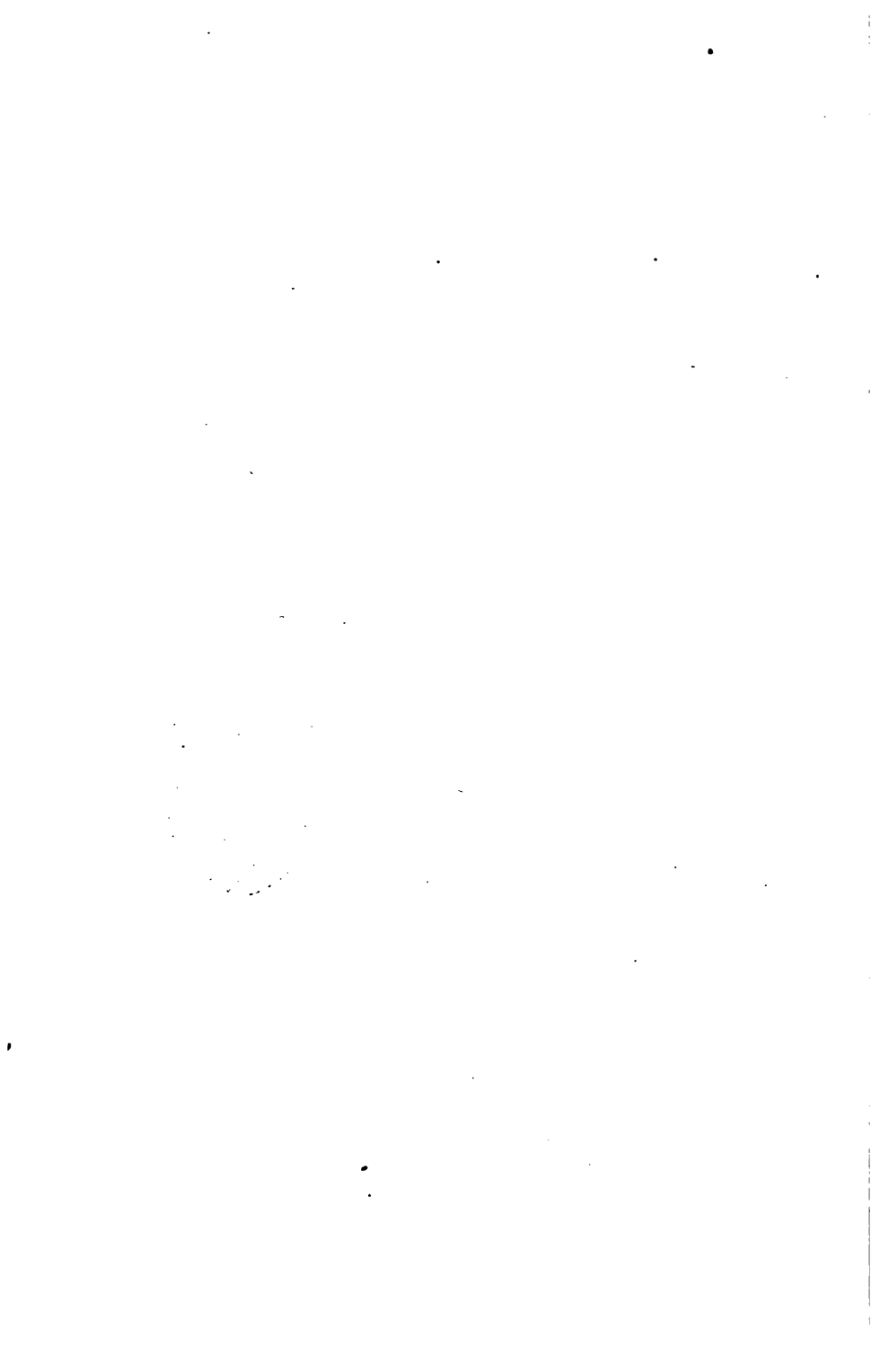






**THE**  
**MINES OF CORNWALL AND DEVON:**  
**STATISTICS AND OBSERVATIONS.**





THE  
MINES OF CORNWALL AND DEVON:  
STATISTICS AND OBSERVATIONS.

ILLUSTRATED BY

MAPS, PLANS, AND SECTIONS  
OF THE  
SEVERAL MINING DISTRICTS IN THE TWO COUNTIES.

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BY

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## INTRODUCTION.

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PROBABLY there are no counties in England with which are associated more varied objects of interest than Cornwall and Devon: as Charles Knight said of them, "Those grand old counties, through whose portals modern civilisation was first ushered by the enterprising commercial spirit of the ancient Greeks and Phœnicians, and whose ports sent forth the conquering spirits of the Drakes, Raleighs, and Cavendishes, to become the terror of the Spanish main, and humble the pride of the haughty conquerors of the new world." Until of late years these counties were comparatively neglected by travellers in search of the picturesque, and by artists, while scenes elsewhere, within our own islands and upon the Continent, far less beautiful, were of fashionable resort; now the two great south-western counties are visited for purposes of taste and recreation, as much as any parts of the British dominions. No portions of our beautiful island are more salubrious. Penzance is pre-eminent as the resort of patients labouring under pulmonary diseases. The southern coast of Devon is indented with beautiful bays and watering-places, which are surpassingly lovely; the inland country graceful, undulating, and fertile. The northern coast is bold, bluff, and craggy, abounding in impressive scenery. The climate of these two coasts is as diverse as the scenery; the north bracing and invigorating, the south almost winterless, where, it has been appropriately said:

"The chilling blasts forget their freezing power."

It is the peculiarity of those two counties, that, take them as a whole, they possess within them almost every variety of scenery, except those of mountains of great elevation, and lakes of large

expanse. But the sea views are magnificent, and the river scenery soft and reposeful, the river Dart probably equalling the far-famed Blackwater.

The historical events that have occurred within their confines, form as interesting pages in our history as any that compose it. Whether looking into the dim distance of intercourse with Phœnicians and Greeks; the struggles of the middle ages, moral and political; the resistance offered to the tyrannical Norman; the romantic enterprise of Perkin Warbeck; the wars for civil and religious liberty, issuing first in the Commonwealth and then in the Restoration; the landing of the Prince of Orange, and the many incidents of more modern times, the two south-western counties stand out in our history with noble prominence.

The social condition of these counties is also striking and peculiar. Cornwall stands at the head in the moral statistics of the counties of England. There is much to admire in the life and habits of the humble poor of Cornwall. The hardy pilchard fishermen, with their clean homes, domestic habits, and religious reverence, are not surpassed by any class of labourers, for order and personal excellence, in the kingdom. The Cornish miners are models of laborious industry and enterprising persistence. The pursuits of Cornwall have enriched so many, that in few counties is there a better proportion of well-to-do middle class persons, and there are many men in the county of great wealth; hence there is an absence of poverty, and the presence of positive comfort in the appearance of the Cornish population. In Devon there is probably less intelligence and less comfort among the poor than in the sister county, but there are numerous independent persons, villa and cottage residents, dispersed all over the county, which causes it to present to the eye of the traveller not only the appearance of comfort but of opulence. Mrs. Bray, in her work on the Tamar and Tavy, says, "A Devonshire cottage, if not too modern, is the sweetest object that the poet, the artist, or the lover of the romantic could desire to see. The walls, generally of stone, are grey, and if not whitewashed, abound with

lichen, stone-crop, or moss. Many of these dwellings are ancient, principally of the Tudor age, with the square-headed, mullioned, and labelled windows. The roof is always of thatch, and no cottage but has its ivy, its jessamine, or its rose mantling its sides and creeping on its top; the little garden, besides its complement of hollyhocks, &c., has a bed or two of flowers before the house of the most brilliant colours. A beehive, and the elder, that most useful of all domestic trees, are seen near the entrance."

There is one portion of Devon, however, very rugged, and the inhabitants of which are rude and simple—Dartmoor. It extends thirty miles from north to south, and fourteen from east to west, and is probably the most picturesque moor in England, with its stern elevations, granite hills, cairns, and cromlechs. The inhabitants are few, and their dwellings scattered. The former are hardy and inoffensive, although not many years ago considered wild and intractable. Their speech is a mixture of Celtic and Saxon; many old Cornish words and ancient Saxon words pervade it: Their huts are very much like those on the Galtes or the Comeras, made of mud, turf, and loose stones irregularly piled; the roof of coarse thatch, of straw, or rushes. There is no class of persons in Cornwall so indifferently off as the dwellers in this part of Devon.

It may be truly said, that no Englishman deserves to be considered well acquainted with his country, who has not visited these counties, studied their resources, and enjoyed their refreshing scenes, "when all the buds are leaping into leaf," or autumn "clothes with hues of richest bronze the foliage."

It shall be my purpose in this work to show that these two counties, containing so much that is fair, fertile, and salubrious, abound in mineral wealth, and that the treasures beneath the soil rival in their importance to man the riches upon its surface.



## P R E F A C E.

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THE importance of accurate statistical information on the various departments of our mining industry is acknowledged, not only by the interests connected with it, but by the public and the Government.

Indeed, without such information well classified, it is impossible for investors to form an opinion as to how they should proceed; their conduct must be *merely* speculative. Nor will agents be in a better position; their advice, without well arranged and well digested statistical information, must be empirical.

The public have, therefore, concurred with practical men as to the necessity of having published the greatest body of statistics and facts connected with mines, which can be collected with accuracy.

The Government has for a number of years felt that such information was of national importance, hence, the annual memorial of Mr. Hunt, issued under the direction of the Treasury.

It is impossible to make the condition and value of a mine, with the operations going on in connection with it, lucid to the general reader without maps and sections. I have spared neither time nor expense to prepare such, as every practical person must see from looking through my work.

Neither have I spared labour nor money in obtaining the most full and precise information; elucidating the character and quality of the products and the price of ores.

District classification, illustrated by ground plans distinguishing the mines in each class, has been adopted as giving at once



the most complete general view, and the minutest particular description which the subject admits.

My observations almost always include the condition and prospects of each mine.

The tables framed are founded upon accurate data, furnished from the mines; and show the quality of black tin, and copper and lead ore raised in each district; and also of the silver extracted from the lead yielded in each lead mine. I have a conviction, inspired by the many testimonials I have received from eminent miners, topographists, and engineers, that my plans and classifications are improvements upon the ordinary method of mine delineation.

Grateful for the patronage extended to former works of mine on this subject, I am encouraged to hope for a more extended perusal by the public of the more important work I now publish.

It would be an unworthy affectation if I did not acknowledge that the reception which my former work met with has greatly added to my professional connexion, in which I hope by intelligence, sustained exertion, attention to the interests of those who consult me, and integrity, to merit support.

THOMAS SPARGO.

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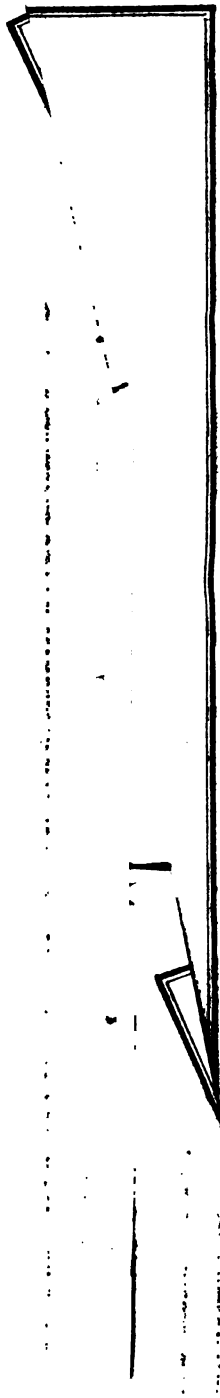
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# CORNWALL.

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## GEOLOGICAL AND MINERAL.

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### CHAPTER I.

CORNWALL, viewed in whatever aspect, is one of the most interesting counties in England, and one of the most important districts in the British Isles. Its geographical situation, considered in relation to our "Island Empire," gives it a claim to attention. It is the most southern and western of our counties, bounded by the sea, except where its most northern limits touch the confines of Devon. It is well watered by rivers which, taking their rise in the higher or central portions of the county, wind their circuitous courses down either slope to the sea. The principal rivers are the Tamar; the Fawey or Fowey; the Fal; the Alan; the Seaton; the Looe; the Hel or Helford; and the Heyl. These streams vary in power and usefulness, some receiving many tributaries, but all important for the irrigation of the soil, and nearly all very useful to the great business of the county—that of mining.

The elevation of the highlands is considerable, and become picturesque when as headlands they approach the sea. In these hills are countless treasures of mineral wealth.

The superficies of the county is cast in very irregular forms, large areas appearing dreary and barren, beneath which the miner finds the coveted ore; but there are many spots of sylvan loveliness nestling between the hills, covering the gentler undulations, and fringing the shores.

The coasts are very striking. To sail by the western shore, with its weatherbeaten granite rocks, passing the Land's End, coming upon the eastern coast of the county, sailing into Mount's Bay, making for the well-known prominence, the Lizard Point, and cruising to the bays and "mouths" of the English southern coast line, would prove one of the most enchanting and exhilarating recreations the man of taste could enjoy.

The geology of Cornwall is interesting to the student of that

science as well as to the practical miner. It is a remarkable fact that Great Britain is geologically, with some few and not very important exceptions, an epitome of all the formations to be met with in any part of the globe which has been already explored. In other countries vast areas are covered with one particular kind of rock, and the student must leave his native land and go to distant scenes, if he would see the mineral structure of the earth, and find its varied rocks and their contents *in situ*. So much is this the case that foreign students of this science have found it most advantageous to come to Britain, where, with comparatively little travel and toil, they have had every formation, and nearly every variety of strata, brought under their notice. The inhabitant of this country is hardly excusable for remaining unacquainted with the ground on which he treads, when others travel from distant countries to hammer at its rocks, and dig out its fossils. Viewing Great Britain in comparison with the continents of the old or new world, we may conceive it to be a geological cabinet, in which few things are wanting to gratify and instruct the diligent learner.

A glance at the geological map of England will at once justify what has been said as to the extent of its geological development. A line drawn from Harwich across the country to the coasts of Cardigan, will pass over all the principal rocks presented in the strata of any country. The rocks which prevail in Cornwall are among the lowest which range among the strata in Great Britain, belonging to the primitive and transition classes. The elevated land which ranges along the centre of the little peninsula is composed of granite, which rises to the surface in various important districts. In the granite formation of Cornwall tin and copper are found abundantly. The rock which generally rests upon the granite, the chief Cornish rock, is the graywacke, or, as the miners call it, killas. Slate for roofing is found in this formation.

The veins of tin and copper lie usually east and west, penetrating the granite and clay slate. The silver, lead, antimony, and cobalt, run north and south almost always, and are found in the clay slate.

It is not possible, in a work like this, to present all the geological features of these counties to the reader. The purpose is to show their mineral productions as brought, or as capable of being brought, into commercial value. Of its importance a judgment may be formed from the testimony of one of our most eminent geologists, who, a few years ago, thus wrote; "The two great metallic products of the district are copper and tin; of the former it yields one-third, and of the latter nine-tenths of the whole supply of copper and tin furnished by the British

Islands, and all the countries of the Continent of Europe." Since this language was employed the proportions have become modified, but still Cornwall and Devon, taken together, produce nearly the proportions asserted.

Being anxious to give a modern view of its mining establishments and peculiarities, I have given a detailed map, separating the county into localities dependent upon physical geography; as well as special maps of the several mining districts. A short time ago, it was thought that the great mines of Cornwall lay only in certain districts to the west of Truro; but comparative anatomy, so to speak, applied to the Cornish rock, soon determined otherwise, and acting upon the laws of analogy, the mining of Cornwall has been so extended, that it is now not only co-extensive with its boundaries, but passes into Devon, which was formerly also a county famous as a tin bearing district, as early as the days of King John, who 600 years ago gave laws for the proper management of mines. In comparatively modern times, it was thought that copper, one of the great commercial metals of Cornwall, only extended from the Land's End to Truro. A little before that time, indeed, the article of copper, in the shape of a mineral, was excluded as waste from the diggings of the Cornish miner, who only recognised tin as the orthodox subject of his researches. Theory, however, is the pioneer of practice; persons who now would be ashamed to avow the narrow-mindedness of a few years ago, take part in the controversy of things as they are, and look back with surprise and even contumely on the things that have been, contemplating with pity these present priests of the temple who appropriate to themselves the pedestals that they long had occupied, and declare that there will be no future change.

It was only a short time ago, when, arguing from things as they had been from time immemorial, many persons said: "We all know that tin lies on the top or out-cropping of lodes, and a little further down we meet with copper; but when the tin sections are worked out, what are we to do for tin?" However, the theory of tin only existing on the top of lodes, like other fallacies, has worn out; the same reasoning would have applied to copper, for those who were ready to predict that a short time would see the end of the tin deposits, were equally ready to admit their fear that the same theory applied to copper, and prophesied that in a comparatively short time there would be an exhaustion of the copper deposits, and the inhabitants of the earth would have to do without either. But a strong blow has been struck in recent times to this reasoning, by the finding of tin in great abundance under the copper at Dolcoath, and men of science see in this state of things a new reading of the laws of nature, and say it is apparent that the deposits of tin and copper alternate with each other,

as far down as the abutting rock exists, and the other geological conditions by which the laws of metallic deposits are governed; therefore, there need be no fear of either of these metals so falling off as to endanger the necessities of man.

Amid modern researches, the laws of nature, as read by Bunsen and Keechoever, have thrown a new light on geology, and given us a hint that we have been dependent upon the sun for our metals, and that the oxidation of the metals from the sun's rays into the crust of our earth has been the basis of all metallic deposits. If so, we must go down a great deal further to get at the foundation of the metals than our geologists have dreamt of. We know that clay-slate is only an oxidisation of aluminum, and we know that clay-slate is sometimes found to be five miles deep. The deepest mines in Cornwall are yet only 300 fathoms below the level of the sea; five miles is 4,400 fathoms, or above 14 times the depth of our present deepest mines. What then have we to fear from the falling off of metallic deposits?

Besides, the progress of human thought and energy is sure to be such as to bring new inventions into use in the working of mines, and so to improve old appliances as greatly to increase their force. The mental powers of man keep pace with the necessities of the human family. In another century, men will regard the knowledge of metals and the mode of working mines now existing as the infancy of mineralogical science.

For convenience sake, the county in the small topographical map herewith published is divided into 13 mining divisions, each having sufficient peculiarities and demarcations to render it distinct in itself. The first is the Penzance district, extending from the Land's End to Marazion, including the seaports of Penzance and St. Ives, and chiefly yielding tin, although much copper is found in its western extremity from under the sea, and some considerable quantity in the slates to the eastward, near Marazion. The next are the Redruth, Helston, and Falmouth districts, the latter famed more for its product of granite than for metals, and esteemed for its safe and beautiful harbour. Redruth, the next mining centre, is an ancient tinner's town, and now contains 8,000 inhabitants, chiefly miners; while 4 miles to the west of it lies Camborne, with 7,500 of the same hardy race and avocation. The chief feature in this group of districts is the Carn Brea Hill, rising 370 feet above the sea, and whose base is surrounded by more copper than any other mountain perhaps in this or any other county. Then come, in moving eastward, St. Austell, famous for its China clay works, "Kaolin," of which the walls of our teacups and saucers are built; and St. Columb, less highly productive of mineral. In the next advance we meet with Bodmin, apparently

having great geological distinctions conformable to nature, which have been only partially realised. Camelford and Liskeard are the next divisions. In the latter, the skilfully worked mines of Fowey and Par Consols are found, and Hingston, Launceston, and St. Germans form the frontier group on the borders of Devonshire, in which is found Devon Great Consols, the most productive and wonderful copper mine in the world.

## THE CASSITERIDES.

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THE coast of St. Michael's Mount and Marazion, and the neighbouring coasts, present many features of interest. From the Land's End to Mount's Bay the shore is convex to the ocean, but broken by a series of small headlands and cones intervening. Mount's Bay derives its appellation from the remarkable and historical rock called St. Michael's Mount, which is nearly insulated, and is opposite the town of Marazion. It is connected with the mainland by a causeway over the sands. Cuddan Point forms the boundary of the Bay to the East, whence the coast runs S.E. to the Lizard, the most southern point of England.

Marazion and St. Michael's Mount have a profound historical interest, connected with remote antiquity and the infancy of British commerce; I shall therefore keep the reader's attention for a little upon them. The name Marazion is believed to mean Jew's market, and derived from a remote period when that people frequented the place in the interest of commerce. The town is situated on an acclivity, and, comparing small things with large, somewhat resembles Algiers, or the towns of Cove and Youghall, in the county of Cork, in Ireland. The population is small, but increasing. In 1841 it was only a few above a thousand persons. In 1851 it had increased in area and population, but more especially in useful public edifices; and this increase has continued to the period of the last census. The town was, however, once much more important than it now is, or has been for many years, and held a superior place in relation to the commerce of the Britons. It is, however, a stirring little place, because of the mineral produce of its neighbourhood, and the importation of timber, iron, and coals for the use of the miners.

St. Michael's Mount is connected with Marazion by a sort of public causeway laid upon the sands, over which, when the tide is out, there is a good and safe passage, but when the tide is in the Mount becomes an island. It is believed by historians and antiquarians that this mount is the *Iktis* of Diodorus Siculus; that the Britons used it as a depôt for the tin which they cast into ingots. The Mount itself is chiefly a mass of granite, and specimens of tin ore are found upon it. Seldom has so small and isolated a space passed through so many fortunes.

In the later times of Druidical superstition the Mount was held to be a sacred place. In Saxon times it was regarded with

vation. The early Normans planted there a monastic institution. Throughout a considerable portion of the middle ages it was a place of pilgrimage, and Marazion was enriched by the great resort of the devotees. The Mount has a military as well as a religious and commercial history. At an early period the Normans built there a castle. During the Wars of the Roses the Earl of Oxford seized the stronghold, which was besieged for several months by the partisans of the House of York, to whom it was surrendered. Perkin Warbeck, whose singular career forms so curious a chapter of English History, held the place, and left his wife there, considering it strong enough to secure her safety. Humphrey Arundell, of Lamberne, held the castle in 1549. After the suppression of the monastery, and when that adventurous gentleman headed the Cornish insurgents, the Mount became a conspicuous and important centre of the struggle. In 1646, the Cromwellians carried the place in spite of a determination to hold it by the Royalists.

During the seventeenth century the fortunes of the inhabitants were various; at one time, a poor widow, inhabiting a small cottage, is represented as the only resident; at another, a few scattered huts occupied its base, and again, a village of fishermen is described as located there.

In 1726-7, Sir John St. Aubyn rebuilt the pier, which circumstance may be considered as restoring the Mount to habitation, as it has never since then been depopulated. At present some hundreds of industrious persons occupy it, and in the pilchard season it is a great resort of the fishermen.

On September 6, 1846, Queen Victoria visited it, and expressed herself as greatly interested in its topographical peculiarities and changeful history.

The island, if we may so call it, from which the Mount rises, is a mile in circumference, comprising about 70 acres. From the level of the sea to the platform of the chapel tower on the summit of the Mount, the elevation is about 200 feet. The rock is steep, yet the chapel was long occupied as a dwelling-house, and the ascent was defended by two small batteries.

No doubt this spot was the most salient position for the trade in tin which the Phœnicians maintained upon this coast, and for which their rivals, the Greeks, so much envied them. To secure this commerce to themselves, the enterprising mariners and traders of Tyre and Sidon, had recourse to many stratagems, by which they succeeded in outwitting their adversaries. The trade in tin maintained by the Phœnicians was very considerable, and was conducted in a manner creditable to the intelligence of both the adventurers from the Mediterranean and the native Celt. How few who have not investigated the subject would suppose that



more than 2,000 years ago Marazion and "the Mount" were busy scenes, where the native miners' skill, and the enterprise of the Oriental mariner and merchant, were exhibited in full activity. According to the accredited interpretation, not only of Siculus but of Herodotus, this was the fact. Diodorus Siculus bears his testimony to the busy life of those ages in the places of which we write in the following terms:—"The produce of the mines is brought down, melted, and purified, and when they have cast it into the form of cubes, they carry it into a certain island adjoining to Britain, and called Iktis. During the recess of the tide the intervening shore is left dry, and they carry over abundance of tin to this place in their carts."

The picture presented by the ancient historian is lifelike and graphic. Marazion is described as the busy hive of miners and smelters, the carriers are represented as setting out with their carts at ebb tide, bearing over their precious charge to the Mount, where the port was, and where the vessels of the foreign merchants and mariners could be rapidly and safely loaded. Upon the quay of the peninsula, no doubt, the British seller and Eastern buyer drove their bargains with all the keenness of merchants of the present day, and the commodities of the East, especially of the Phœnician coasts, were received in exchange for the tin of Cornwall.

This picture affords evidence of the enterprise and power of the great people who created the glory of Tyre and Sidon; who could, in the state of navigation then existing, come so far and found a commerce so important to the ancient Britons and to themselves.

The representation made of the state of the people of Cornwall, proves their high degree of civilisation at that early period of its progress in Europe. The ancient historian describes the miners as "working very skilfully the material that produces the tin from the rocky ground." This "rocky ground" has generally been supposed to be the "Land's End," some 15 or 16 miles distant, but it is much more likely to have been the declivity falling from the granite side of St. Ives down to Mount's Bay, a much shorter distance. It is a curious and interesting consideration for the antiquary and historian, and even for the patriot interested in his country, that 2,300 years ago, the very same course of procedure in the acts of industry and life, passed on the coasts of Cornwall that takes place there to-day.

Diodorus mentions another circumstance, which throws some light upon the comparative condition of two distinct branches of the Celtic family, in a manner which cannot fail to interest the Cornish descendants of one of these tribes or septs. The historian says, after describing what took place at the Mount, "From

hence the traders purchase the tin of the natives, and transport it into Gaul; and finally, through Gaul on foot, in about thirty days they bring their burdens on horseback to the mouth of the river Rhone." From this it would appear that Gaul at that time was probably without roads, certainly without wheeled vehicles, while in Britain, at all events in Cornwall, there were carts adapted to the transport of the tin from the mine to the place of smelting, and thence upon the rough causeway of the peninsula to the port. As a horse will draw five times as much as it can carry, the British mode of conveyance was more economical, and indicates an advanced civilisation, beyond what was possessed by the other branch of the great Celtic family settled in Gaul. Some have attributed this superiority to the intercourse of eastern foreigners on the Cornish coast, and consider that this form of civilisation was limited to the shores upon which that intercourse took place. They affirm that the cars or carts were not of solid construction, nor adapted to convey burdens of any magnitude, especially such distances as from the northern coasts of Gaul to the mouth of the Rhone. The adoption of traction on the coast would, from its manifest advantages, soon spread inland; we know that at a later period, the Britons were famed for their war chariots, the strength and beauty of which obtained the panegyric of the Roman invaders.

The people of Cornwall were, at an early period, very much of Oriental extraction. Phœnicians settled there, as upon the coasts of Spain and Ireland, bringing with them their peculiar forms of civilisation.

A view of all these interesting facts cannot fail to form the conviction, that there is no more permanent industry than that of mining. Who can form a conception of the multitudes who have found employment and support in the "tin isles," as these shores were called, from a period as early at least as the days of the prophet Ezekiel to the present day; and still Cornwall opens up to British spirit and vigour great areas of mineral resources and of enterprise. Let it be hoped that our country will value its advantages, diligently work its resources, and perpetuate the memory of the "tin isles" far into the future, and with greater renown.

## CHAPTER II.

### THE WESTERN DISTRICT OF CORNWALL.

OUR readers will find by consulting our map, that this district extends from the Land's End to Marazion, or the Jew's Market, as the name is said to imply. This famous promontory is the most remarkable land in England; its history is world-wide, and contemporaneous with that of the great kingdoms of the East. All around it is compassed by the Atlantic Ocean, except the little bit of low land, extending from the inside bight of the Mount's Bay, to the Hayle River, a distance of little more than three miles. On the north, north-west, west, and south-west, it is surrounded by immense ramparts of granite. To the south, from Penzance to the famous and picturesque semi-island of St. Michael's Mount, our coast is less precipitous, the ground is lower, and the foreshore is a beach of sand. This mighty natural sea-wall is composed of granite. Along the westernmost shores the clay slates have been degraded by the action of these mighty waters, until they have reached the granite cliffs, and there the geological condition most favourable to the growth of copper and tin exists; the union of the killas, which is the Celtic name for bluestone or slate "glas" blue (which in the original is careg-glas) with the granite; and consequently along these shores we have running out under the bed of the Atlantic, veins of metal with an active community of some of the best men in England, engaged many hundreds of feet below the waves of the Atlantic, in carrying tunnels into the tin and copper lodes under the sea. Quiet, unpretending, enterprising labourers have pushed the work out beyond the shores of their native land. How monotonous their lot; early in the morning, in the mid-day, and at midnight, you may find troops of these worthy labourers quietly and lovingly going to their underground labour, as if no other work had charms for them; the chorus to the stroke of their hammer, the echo of the sound of its blow, and above them the roar of the wave of the ocean as it traverses its yellow bed of granitic sand, alone companion them; they fulfil their destiny with a patience and hopefulness that foreshadows constant good to the future of the human race. Here, as I write, with the sound of the rolling cars of the city filling my ears, while the theatres are full of amused occupants, I reflect on days when I was environed by those rocky caverns,

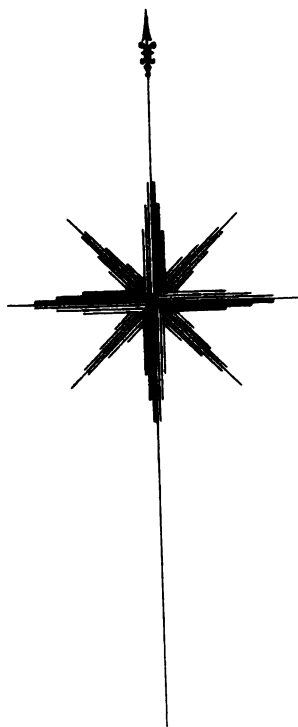
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doing the duty that our friends the miners now do, and doing it as happily as I am now spending my hour in the whirl of work of this great metropolis.

In order to understand the question before us, we must take a glance at the geological state of this part of Cornwall, and theoretically and practically look into its condition. I have stated that most of the coast line is bounded by granite. The other rocks of which the county is formed are principally clay slates, traversed by veins of elvan, and studded by patches of greenstone—it is this commingled state of things that apparently has led to the formation of the metallic veins here, and by consequence, to the existence of the mines of Cornwall.

It would appear from an examination of these rocks, so far as we can judge of them *in situ*, that the clay slates originally lay level through the county, and that the granite rock was protruded subsequently through them, raising them into ridges or hills, and dividing them into separate pieces. In order to have effected this, we must come to the conclusion that there must have been some latent power concealed in the granites, which exerted its influence either rapidly or slowly, to effect the elevation now existing on the surface, and other phenomena below, in the broken slates. Whatever this power might have been, it will not appear far-fetched to suppose that it was as intimately connected with the healing of the breakages of the rock, by filling them up with metals, as it was with their rupture. We neither know at what depth these powers were held in the granite, nor of what they were composed; but it is natural to suppose they were confined in caverns, and that they were gases, possibly oxygen. In order to understand that our metallic lodes were formed by gases, it is only necessary to suppose that they contained the elements or element of the metals, we can then easily imagine that in their passage through the injured rocks, by certain geological laws, their metals were eliminated—we have reason to go thus far, from the fact that in large pieces of unbroken ground, whether of granite or slate, there is seldom found any great abundance of metal. At the present moment there is considerable controversy as to the igneous rocks; most of the geologists attribute the existence of the crystalline rocks to a fiery or melting process, while many of our practical miners insist on their being formed by the laws of crystallisation. The power of crystallisation is so great, that all our metallic lodes are formed by it, and all the surface and substrata of the earth seem to be formed on a basis of crystallisation.

The operation of water and fire is, however vast, secondary to the mode of crystallisation. Some terrestrial power, not yet discovered by us, has effected both sedimentary and crystalline

rocks. The westernmost mines of this district are found at St. Just; the cliffs here are of granite, and rise up to a height of upwards of 600 feet, almost immediately fronting the water. The Botallack Mine is a type of the others in this formation; the clay slate joins the granite at the verge of the cliff, inland the veins are formed in granite, and yield tin; under the sea they run into the slate formation, and yield copper ore in great abundance, and in great variety; the mariner, in passing the Land's End and the western coast, in the district we are alluding to, sees the steam engines like a race of giants working away with their beams weighing 20 tons of cast iron, with 100 tons appended to them, as if the weight were only a trifle, and their motion proceeds with the regularity of clockwork. On the south side of the Peninsula, at Samosa Cove, are found the great granite quarries that contribute beautiful varieties of ornamental stonework, as well as the rougher block, to the uses of architecture.

In these western domains are also found the Logan stones, and other Druidical remains, evidences of the religion of our ancestors. We now traverse to the eastern end of the St. Ives, St. Just, and Penzance districts, and on the north at St. Ives, we find a group of tin mines equal, as established mining property, to any in the county. The St. Ives Consols has been working now for upwards of thirty years, and renders her dividends as regularly as ever. The port of St. Ives is protected by a small headland of granite, shielding it from the fury of the waves of the Atlantic, in their progress up channel, perhaps occasionally the most destructive and furious current of waters to be found in the world; the mines run into the town, some of the lodes passing under it, and from this place southward, as far as Ludgvan, there are a series of the most productive tin lodes in the county of Cornwall. At Ludgvan, the character of the sub-country is changed by the intersection of slate, and the lower granite and greenstone courses, and the lodes, instead of bearing tin, bear copper and silver, southward to the bight of the sea forming the water of the Mount's Bay, and farther if it were practicable to work them.

We will now go into particulars with relation to the workings of some of the great mines in the district, so that the reader may understand their value and character. To the investor this will be useful, and to the general reader instructive.

## LEVANT,

in the parish of St. Just, Cornwall, in 160 shares. The *Purser* is Mr. Henry Borrow, Truro. The *Managers*, Captain James Evans, Illogan, and Captain John Nicholas, on the mine. Rocks, granite slate and greenstone. Persons employed 245—viz., men 180, females 17, boys 48. *Landowners*, Mr. Robyns's executors one moiety, Messrs. Trezise and partners the other moiety of the land. The dues for the part under the sea go to the Crown. Depth of adit 30 fathoms, under adit 254 fathoms. Commenced working in 1820. Total dividends paid £1,091 per share. Money expended £2 10s. per share. Pumping-engine, 40-inch cylinder. Stamping-engine, 36-inch cylinder. Winding-engine, 27-inch cylinder. Crushing-engine, 18-inch cylinder. Man-engine 24-inch cylinder.

## MINERALS SOLD IN 1863.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	846	17	2	0	...	for	£4,197	9	7
Black tin	206	11	3	16	...	..	12,231	8	2
							£16,428	17	9

This mine has been one of the great prizes amongst the Cornish list of mines. On an outlay of £2 10s. per share, the Shareholders have received £1,091 per share. When the price of tin moves up but a small degree, dividends, now in abeyance, will be resumed. Every person who invested money in this mine has received it back 440 times over in 44 years, or 10 times the amount of his investment every year. If persons who are in the habit of expressing their doubts upon the legitimacy of mining and miners were confronted with such palpable arguments as these, it would probably alter their minds, and cause them to confess that mining after all is not such a bad investment.

## BOSCEAN,

in the parish of St. Just, Cornwall, commenced working on June 6, 1850. There has been a profit on the working of about £2,400, but in 1864 the Company sustained a loss of £544 5s., owing to the low price of tin as compared with the price given before the American war.

## BLACK TIN SOLD IN 1864.

175 tons 7 cwt. 3 qrs. 26 lbs. ... for ... £10,951 11s 4d.

Mr. Samuel York, of Penzance, is *Purser*. Captain Richard Berryman is *Manager*. The rock is decomposed granite, about



half-a-mile from its junction with clay-slate. 127 men, 46 females, and 38 boys (total 211), employed in the works. *Landowners*, Col. Scobell, George Grenfell, Esq., Lord Falmouth, and others. Dues 1-25th. Depth of adit, 14 fathoms; depth under adit, 78 fathoms. There are 2 draught-engines, viz., 40-inch and 36-inch cylinders. One stamping-engine of 24-inch cylinder; and one winding-engine of 22-inch cylinder. This has been a productive mine, but at present is not self-sustaining, for the reason above mentioned.

### BOSCASWELL,

in the parish of St. Just, Cornwall; in granite. *Purser*, Mr. Sml. York, Penzance. *Manager*, Captain William Noy, Boscaswell. 98 men, 24 females, and 26 boys (total 148 persons), employed. *Landowners*, Samuel Borlase, Esq., and others. Dues 1-24th for tin, and 1-20th for copper. Depth of adit, 28 fathoms; under adit, 210, but not working below 170. Commencement of present Company's operations in 1859. There has been a loss on the working, but not large. In 1864 there was a profit. Pumping-engine, 36-inch; stamping-engine, 34-inch; winding-engine, 24-inch.

#### IN 1864 THE COMPANY SOLD.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore ...	139	15	2	0	...	for ...	940	18	1
Black tin ...	119	6	2	5	...	„ ...	6,840	2	8
							<hr/> £7,781 0 9 <hr/>		

The profits are said to be good, and dividends may be anticipated in 1865, exceeding those previously given.

### EAST PROVIDENCE,

in 3,986 shares, is in the parish of Lelant, Cornwall, in the lands of Messrs. W. B. Tyringham and Lawry, to whom 1-18th of the produce in money is paid for "dues." *Purser*, Mr. Thomas Hollow, Lelant. *Manager*, Captain Thomas Uren, Lelant. The rocks, granite and clay-slate. 65 men, 2 females, and 2 boys employed. Workings commenced on March 6, 1857. Pumping-engine, 40-inch cylinder. Stamping and winding-engine, now being erected, 24-inch.

#### SOLD IN THE YEAR 1864.

Black tin ... 25 tons 18 cwt. 2 qrs. 2 lbs. ... for ... £1,636 4s. Od.

This mine, from its immediate contiguity to Providence mine, and having the productive lodes thereof, may be regarded as a property in which persons may safely hold on their shares.

### CARNYORTH,

in the parish of St. Just, Cornwall. *Purser*, Mr. Samuel York, Penzance. *Manager*, Captain John Wallis. Rock granite. 65 men, 23 females, and 23 boys employed. *Lords*, Viscount Falmouth and others. Dues 1-24th. Depth of mine at adit 26½ fathoms; under, 123 fathoms. The working commenced in the year 1852. There has been a loss on the working. Machinery employed; 30-inch pumping-engine. 24-inch stamping and winding-engine. Also 2 water-wheel stamps, one of them 20 feet, and the other 14 feet diameter.

### LELANT CONSOLS,

in Uny Lelant, Cornwall, in 963 shares. *Purser*, Mr. William Richards, 17 Regent Terrace, Penzance. *Manager*, Captain Jas. Williams, Lelant. *Lords* of Trembethew Manor (viz., Rodd, Tremayne, Stephens, and Tyingham), owners of land and minerals. Dues 1-20th; depth of adit, 11 fathoms; depth under, 70. Rock granite. About 40 men usually employed; but, at present, not so many. Pumping-engine, 24-inch; winding-engine, 20-inch. One water stamps.

They sold, in 1864, about 12 tons of tin.

The Company commenced operations about 15 years ago, and have displayed great patience, having been paying calls regularly during that period. The present operations are on another part of the sett, where it is hoped better results will attend their labours. The mine being adjacent to the rich Wheal Margaret—on parallel lodes—the non-success hitherto has been a great disappointment.

### BOSWEDDEN AND WHEAL CASTLE,

in St Just, Cornwall. *Purser and Manager*, Mr. Richard Boyns, Boswedden. Rocks, killas and granite. 90 men, 25 females, and 40 boys (total 155 persons) employed. Depth to adit 40 fathoms; depth under adit, 95 fathoms. A 40-inch engine and a 52-foot water-wheel pump the water. A 28-inch engine and a 20-foot water-wheel stamps the tin, and a 30-foot water-wheel draws the stuff.

## RETURNS IN 1864.

							Tons	cwt.	qrs.	lbs.	£	s.	d.
Copper ore	...	...	9	...	...	...	...	...	...	...	127	0	0
Black tin	...	...	77	1	3	0	...	...	...	...	4,430	0	0
											£4,557	0	0

The operations in this mine are under judicious direction, and the Company may look forward to beneficial results.

## TOLVADDEN MINE,

in the parishes of Marazion and St. Hilary, Cornwall, in 6,000 shares. *Purser and Manager*, Mr. Absalom Bennett, Marazion. Rock clay-slate, influenced by carns of Helvan. Number of persons employed, 75—viz., 40 men, 20 females, and 15 boys. *Landowners*, Messrs. St. Aubyn, Bolitho, Patten, Bennett, and Laity. Dues, 1-18th, except in Bolitho's part, where the dues are 1-15th. Depth of mine to adit, 27 fathoms; under adit, 103 fathoms. Workings commenced in 1857. There has been a profit on the working, but the dividend has been in abeyance since.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.				£	s.	d.
Copper ore ...	777	7	3	...	sold for ...		3,601	2	1
Tinstuff...	...	...	...	...	,, ,,	...	523	15	0
							£4,124	17	1

At one time the prospects in the mine were such as to encourage expectations of large dividends, which have remained unfulfilled. We are glad to hear, however, that the lode is renewing its productive character, in the bottom levels, and that a new range of the ground is likely to be opened by deeper sinkings, which, it is probable, will contribute to the success of the proprietary, who deserve well of the mining world, not only for their geological judgment in the selection of the ground, but also for the perseverance manifested in pursuing the ore deposits, which, as is the case in all mines, have occasionally shown phases of a discouraging nature; but these, we hope, are only temporary obstacles such as are incident to all mundane affairs, and which, when surmounted, open up a field of permanent prosperity.

## WHEAL REETH,

in Uny Lelant, Cornwall. *Secretary*, Mr. John Barrat, Wheal

Reeth. *Manager*, Captain Joel Higgins, Scorrier. Rock, granite. Depth of adit, 30 fathoms. Depth under it, 220 fathoms. Pumping-engine, 40-inch. Stamping-engine, 30-inch. Winding-engine, 24-inch. "Man-engine," 30-inch. *Landowner*, W. B. Tyringham, Esq. Dues, 1-18th. 180 men, 30 females, and 30 boys employed.

## MINERAL SOLD IN 1864.

										Tons. cwt. qrs. lbs.							£	s.	d.
Black tin	...	197	3	2	4	...	for	...	14,401	1	0								

This is an old mine, but the present Company took it in 1844. They have not been fortunate, like their predecessors, having sustained a loss; but their loss in 1864 was small, and the late price of tin would have prevented any. It is situate in a good tin producing district.

## SPEARNE CONSOLS,

in St. Just, Cornwall, in 794 shares. *Purser*, Mr. James B. Coulson, Penzance. *Manager*, Captain Thomas Bennetts, St. Just. *Landowners*, Messrs. Robyns, Trezise and White. Dues, 1-48th. Depth of adit, 26 fathoms. Depth under adit, 150 fathoms; but now idle under the 90 level. 40 females and 10 boys employed. Pumping-engine, 30-inch. Winding-engine, 20-inch. 2 water stamping mills. Rock, granite.

## MINERAL SOLD IN 1864.

										Tons. cwt. qrs. lbs.						£	s.	d.
Black tin	...	36	11	0	12	...	for	...	2,270	0	5							

The present working commenced in 1839; there has been a loss, but amount unknown, except during the last 5 years, when it was £4,100; of which last year's was £1,200.

## WHEAL HEARLE,

in St. Just, Cornwall, in 3,648 shares. *Purser*, Mr. Thomas Hollow, Uny Lelant. *Secretary in London*, Mr. John Hoyle. *Manager*, Mr. J. S. Phillips, Pool, Illogan. *Landowners*, Messrs. Augustus Stephens Rodd, Tremayne, H. Grylls Thomas, James Trezise, Thomas White, and Martin Edwards. Dues, 1-20th. Depth of adit, 8 fathoms. Depth below, 150 fathoms. Pumping and stamping engine, 30-inch. Winding-engine, 10-inch. Rock, granite. 65 men, 16 females, and 14 boys employed.

The present Company commenced in 1859, and has worked at a loss of a few thousands. The prospects are fair. If tin had remained at the late price, the returns would cover current cost, which, notwithstanding the depreciation, will, it is believed, soon be the case.

## BOTALLACK,

in 200 shares, in St. Just, Cornwall. *Purser and Manager*, Mr. S. H. James, St. Just. *Proprietor of the Land*, Lord Falmouth. Dues for copper, 1-18th, and for tin, 1-24th. The Duke of Cornwall and the Crown receive 1-3rd of dues for minerals raised under the sea. Depth of adit, 50 fathoms; depth under surface of water, 220 fathoms. Rocks, granite, killas, and greenstone. 299 men, 116 females, and 115 boys employed. 3 pumping-engines, 37, 30, and 30-inch, at work. Stamping-engine. 36½-inch. 7 winding-engines, 26, 26, 26, 16, 16, 10, and 10-inch. Crushing performed by one of the 26-inch winding-engines.

## MINERALS SOLD IN 1864.

		Tons, qrs. cwt. lbs.					£	s.	d.
Copper ore	..	215	19	2	0	...	for ...	1,380	2 3
Black tin	...	426	0	0	0	...	for ...	29,724	0 0
								<hr/>	
								£31,104	2 3

The present Company have been concerned in the mine 30 years, and have profited £100,000 up to the end of 1863. Profit last year, £16,000. The mine was worked, probably over 100 years before the present Company took it, and is likely to be worked during a similar period.

## BALLESWIDDEN,

in St. Just, Cornwall, in 1,310 shares. *Purser*, Mr. R. V. Davy, Penzance. *Late Manager*, Captain Trehair, who has just left. *Landowners*, Messrs. Millett, Lawry, Scobell, and others. Dues, 1-29th (Millett and Scobell); other Lords, 1-33rd. Depth of adit, 16 fathoms; depth under it, 162 fathoms. Rock, granite. 258 men, 36 females, and 52 boys employed. Pumping-engine, 80-inch. Pumping-engine (idle), 45-inch. Stamping-engine, 36-inch. 4 winding-engines, 24, 18, 16, and 26-inch.

## MINERAL SOLD IN 1864.

		Tons. cwt.			£	s.	d.
Black tin	...	309	16	...	for ...	19,701	17 3

The mine has been worked from time immemorial; by the present Company 44 years. Owing to the fall in price of tin, they have been losing for last 9 months, and are likely to continue to lose until an advance takes place in that article.

## SPEARNE MOOR,

in St. Just, Cornwall, in 280 shares. *Pursers*, Messrs. Higgs and Son, Penzance. *Manager*, Captain Charles Bennetts, at the

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in St. Just, Cornwall, in 280 shares. *Manager, Captain Charles Bennetts, at the*  
and Son, Penzance.

mine. *Landowners*, Messrs. William Trezise, Rd. White, and others. Dues, 1-20th. Depth of adit, 15 fathoms; depth under adit, 128 fathoms. Pumping, stamping, and winding-engine, 35-inch. 75 men, 15 females, and 15 boys employed. Rocks, granite and clay slate.

## MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.					£	s.	d.
Black tin	...	75	3	0	10	...	for ...	4,545 9 11

Works commenced about 35 years ago, and have been continued at a loss; but their prospects at present warrant a belief that the returns will in future meet the cost, at present price of tin.

## NORTH LEVANT,

in St. Just, Cornwall, in 2,000 shares. *Pursers*, Messrs. Samuel Higgs and Son, Penzance. *Manager*, Captain James Bennetts, St. Just. *Proprietors of Land*, Messrs. William Trezise, Richard White, and others. Dues, 1-20th. Depth of adit, 40 fathoms. Depth under it, 60 fathoms. Rocks, granite and clay-slate. 65 men, 5 females, and 20 boys employed. Pumping and winding-engine, 24-inch. Stamping-engine, 24-inch. Operations date back 12 years. The returns meet the cost, and are likely to do so in future.

## PENDEEN CONSOLS,

in St. Just, Cornwall, in 5,000 shares. *Purser*, Mr. Richard White, Trewellard, St. Just. *Manager*, Captain James Warne, Boscawell, St. Just. *Landowner*, Samuel Borlase, Esq., Castle Horneck, Penzance. Dues, 1-22nd, tin; 1-20th, copper. Rocks, granite, killas, and greenstone. Depth of adit, 26 fathoms. Depth under, 154 fathoms. Pumping-engine, 24-inch cylinder. Stamping-engine, 32-inch (32 heads). Winding and crushing-engine, 19-inch. This mine was commenced by a Company formed 10 years ago by Mr. Richard Greenwood, who undertook, for an expenditure of £4,000, to put the mine into a dividend state; and that no more calls should be made. Nearly £20,000 have been called up since then. The prospects at present are fair.

## WHEAL BAL,

in St. Just, Cornwall, in 64 shares. *Purser*, Mr. Richard Quick, Trewellard. *Manager*, Captain James Trezise, St. Just. *Landowners*, Messrs. William Trezise, Richard White, and others. Dues, 1-24th. Adit, 60 fathoms deep. Depth below adit, 60 fathoms. 15 men and 6 boys employed. No steam machinery on the mine, the works being, exclusively, above adit level.



## RETURNS IN 1864.

	Tons.	cwts.		£	s.	d.
Black tin ... ..	17	6	... sold for	1,065	15	1

This is a very ancient work, the returns from which have about met the cost,—which is the present state of the mine. An increase in price of tin would afford a small dividend. The rock is granite.

## PROVIDENCE,

in Uny Lelant, Cornwall, in 1,120 shares. *Pursers*, Messrs. Higgs and Son, Penzance. *Manager*, Captain William Hollow, Lelant. *Landowners*, Messrs. Tyringham, Bassett, and Stephens. Dues 1-22nd. Depth of adit, 46 fathoms. Depth below, 125 fathoms. Rocks, granite and clay-slate. 240 men, 65 females, and 81 boys employed. Pumping-engine, 40-inch. Stamping-engine, 30-inch. Winding-engine, 20-inch.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Copper ore ... ..	...	...	...	...	for	103	0	0
Black tin ... 369	2	1	16	...	„	22,172	9	1

£22,275 9 1

The capital paid up by the original shareholders, to May, 1848, was £10 6s. 7d. per share, equal to .....	£11,569	8	1
In addition to which was received for copper ore up to that time...	53,940	0	0
For tin .....	34,746	18	4
Ore of uranium .....	26	4	4

Total amount expended before any dividend .....	£100,282	10	9
Copper ore sold since May, 1848 .....	£ 4,079	13	3
Tin do. do. ....	169,034	14	5
	173,114	7	8

Total receipts (exclusive of £1,937 12s. 1d. received for sundries) £273,396 18 5

Dividends paid in 1848 .....	£ 2,581	0	0
Do. 1849 .....	3,640	0	0
Do. 1850 .....	2,576	0	0
Do. 1851 .....	1,680	0	0
Do. 1853 .....	840	0	0
Do. 1854 .....	1,540	0	0
Do. 1855 .....	6,300	0	0
Do. 1856 .....	10,080	0	0
Do. 1857 .....	10,080	0	0
Do. 1858* .....	5,040	0	0
Do. 1859 .....	11,634	0	0
Do. 1860 .....	8,680	0	0
Do. 1861 .....	4,480	0	0
Do. 1862 .....	5,040	0	0
Do. 1863 .....	22,785	15	2
Do. 1864 .....	22,786	1	6

\* In this year £2,000 was expended in machinery.

Since the commencement of paying dividends, about one-third of the produce has been divided as profit among the shareholders, a circumstance which, for so long a period, is believed to be without a parallel in tin mining.

In May, 1846, that portion of the sett called Wheal Providence, from which the copper was principally raised, the sale of which up to that time amounted to £1,775 15s. 5d., failed, and was abandoned.

The success of the adventure may be mainly attributed to the judicious policy of the lords, Mr. Praed (now Tyingham), the Basset family, Mr. Stephens, and Mr. Gilbert, in giving up the dues for a time, which assisted the adventurers in prosecuting the concern to a profitable issue. £2,000 has lately been expended in new tin floors, railways at surface and underground, &c. The mines continue to look well, with good prospects for the future. This has afforded a most successful enterprise, one of those things that hold up assurance even to the uninitiated, that Cornwall is a good county in which to invest money. I look forward to a career of good profits for this wisely established and well-doing concern.

### WHEAL MARGARET,

in Uny Lelant, Cornwall, in 896 shares. *Purser and Manager*, Captain Thomas Treweeke, St. Ives. *Landowners*, Hearle family and Tyingham. Dues, 1-20th. Depth of adit, 25 fathoms. Depth under it, 180 fathoms. 100 men, 30 females, and 40 boys, employed. Rock, granite. Pumping and stamping engine, 36-inch. Pumping-engine, 24-inch. 2 winding-engines, each 24-inch.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Black tin ...	95	11	1	10	... for ...	5,213	8	6

The present Company commenced in 1842. The dividends have been about £90,000, but last year there was a small loss.

### EAST MARGARET,

in Uny Lelant, Cornwall, in 1,024 shares. *Purser*, Mr. Samuel Higgs, junr., Penzance. *Manager*, Captain Benjamin Martin, Halsetown. *Landowners*, W. B. Tyingham, Esq., and others. Dues, 1-18th (remitted during pleasure). No adit to present works. Depth of mine, 87 fathoms. Rocks, granite and slate. 75 men, 16 females, and 21 boys employed. Pumping-engine, 37-inch. Stamping-engine, 30-inch. Winding-engine, 20-inch.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Black tin ...	65	10	0	4	... for ...	3,726	12	6

Present working commenced in 1849, but the Company which now holds it took the mine about four years ago. There has been a loss on the adventure, and the prospects are not good enough to warrant a belief in its reimbursement. There is no fault in the management.

### ST. JUST UNITED

(late Bounds and Bellan Mine), in St. Just, Cornwall, in 8,000 shares. *Secretary*, Mr. Thomas C. Smith, 15 Finsbury Place South, London, E.C. *Purser*, Mr. William Angwin, St. Just. *Manager*, Captain Rd. Pryor, Redruth. *Landowners*, Messrs. John Batten, A. Chenhalls, Robartes, Rd. Boyns, and J. U. Scobell. Dues, 1-24th. Depth of adit, 50 fathoms. Depth under adit, 86 fathoms. Rock, granite, and killas in the sett. 240 men, 25 females, and 15 boys employed—total 280. Pumping and stamping engine, 36-inch. Stamping and winding-engine, 24-inch. Winding-engine, 24-inch.

#### MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.						£	s.	d.
Black tin	...	223	8	3	16	...	for	...	14,268 4 6

Present Company commenced January 1, 1862. Prospects good.

### ST. JUST CONSOLS,

in St. Just, Cornwall, in 6,000 shares. *Managing Director*, Mr. H. J. Phillips, 22 New Broad Street, London, E.C. *Purser*, Mr. W. Angwin, St. Just. *Manager*, Captain John Carthew, St. Just. *Landowners*, Champernowne, Esq., Rev. Uriah Tonkin, Nicholas Boyns, Esq., and Rev. William Hodgson. Dues, 1-24th. Adit, 17 fathoms deep: depth below adit, 9 fathoms. Rock, granite. 13 men, 1 female, and 2 boys employed. 2 water-wheels, each 24 feet by 3 feet, pumping water and lifting 16 stamp heads.

#### MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.						£	s.	d.
Black tin	...	6	16	0	7	...	for	...	436 19 6

Works commenced in April, 1863. A new mine, requiring time to open and prove the character of the lodes. Prospects are said to be good; the district is unquestionably so.

### WHEAL KITTY,

in Uny Lelant, Cornwall, in 1,024 shares. *Purser and Manager*, Captain Thomas Richards, Redruth. *Mineral Owners*, Messrs.

Tyringham and Rogers (one-half each). Dues, 1-20th. Depth of adit, 27 fathoms; depth under adit, 163 fathoms. Rock, granite. 120 men, 16 females, and 11 boys employed. 2 pumping-engines of 33 and 28-inches respectively. Stamping and winding-engine, 24-inch.

#### MINERAL SOLD IN 1864.

Black tin ... .. realising £6,708.

Works re-commenced about 15 years ago. The Company have divided £10,000. The previous calls were £3,000. There was a profit in 1864.

#### TRENCROM,

in Uny Lelant, Cornwall, in 1,007 shares. *Purser and Manager*, Captain Thomas Richards, Redruth. *Landowner*, W. B. Tyringham, Esq. Dues, 1-18th. Depth of adit, 27 fathoms; depth below adit, 110 fathoms. Rock, granite. 76 men, 22 females, and 16 boys employed. Pumping-engine, 30-inch. Stamping and winding-engine, 25-inch.

#### WHEAL MARGERY,

in St. Ives, Cornwall, in 960 shares. *Pursers*, Messrs. Higgs and Son, Penzance. *Manager*, Captain Richard James, Trenwith. *Landowner*, Duke of Cleveland. Dues, 1-18th. Adit, 35 fathoms deep at engine-shaft; depth under adit, 140 fathoms. Rocks, clay-slate and granite. 112 men, 31 females, and 10 boys employed. Pumping-engine, 45-inch. Stamping and winding-engine, 20-inch.

#### EAST ST. JUST UNITED

(late Bosorne and Bellowal United), in St. Just, Cornwall, in 6,000 shares. *Managing Director*, Mr. H. J. Phillips, 32 New Broad Street, London, E.C. *Local Purser*, Mr. William Angwin, St. Just. *Manager*, Captain John Carthew, St. Just. *Landowners*, Messrs. William Angwin, John Bennett, Pascoe Grenfell, Robartes, Alfred Chenhalls, Scobell, and Richard Boyns. Dues, 1-24th. Depth of adit, 40 fathoms; depth under adit, 30 fathoms. Rock, granite. 42 men and 4 boys employed. Pumping-engine, 40-inch. Water-wheel (pumping), 19 feet by 3 feet. 2 stamping

water-wheels, lifting 15 heads. The present working commenced in February, 1865, so that there has not been time to make any returns of minerals.

### CAPE CORNWALL,

in St. Just, Cornwall, in 6,000 shares. *Managing Director*, Mr. Phillips, 32 New Broad Street, London. *Purser*, Mr. Frederick Holman, St. Just. *Manager*, Captain John Carthew, St. Just. *Landowners*, Mrs. Pascoe and another. Dues, 1-24th. Depth of adit, 8 fathoms; depth under adit, 92 fathoms. Rocks, clay-slate and granite. 45 men, 4 females, and 5 boys employed. Pumping, stamping, and winding-engine, 26-inch. No returns in 1864, but tin has been sold this year (1865). The works recommenced in April, 1864. Prospects of abundant profit are said to be held out to the Company.

### BILLIA

(late Durlo,—formerly Reeth Consols), in Towednack, Cornwall, in 1,000 shares. *Purser*, Mr. J. B. Coulson, Penzance. *Manager*, Captain Richard Blight, Penzance. *Landowners*, Duke of Cleveland, Mrs. Gilbert, and others. Dues, 1-18th. Adit, 20 fathoms deep (at late engine shaft in Reeth Consols); and bottom, 202 fathoms under it (idle). Depth under adit at Billia shaft, 25 fathoms. Pumping-engine, 36-inch. Stamping-engine, 27-inch. Winding-engine, 22-inch. Rock, granite. 68 men, 33 females, and 54 boys employed.

#### MINERAL SOLD IN 1864.

	Tons. cwt. qrs. lbs.					£	s.	d.
Black tin	...	66	12	1	17	...	for	4,132 16 6

The late Company commenced the works about 30 years ago, under the name of Reeth Consols. A few years ago they changed the name to Durlo. The present Company, who came a short time since, confine their operations to Billia lode, from which the present name of the mine is derived. It is in the northern part of the sett. The prospects are good; but the late Company lost a large sum in the concern.

### TRELYON CONSOLS,

in St. Ives and Uny-Lelant, Cornwall, in 562 shares. *Pursers*, Messrs. Higgs and Son, Penzance. *Manager*, Captain Richard

James, Wheal Trenwith, St. Ives. *Landowners*, Earl of Mornington, and Messrs. Stephens, Bassett, and Tyringham. Dues, 1-22nd. Depth of adit, 20 fathoms. Depth below it, 70 fathoms. Rock, granite. Pumping, stamping, and winding-engine, 24-inch (double). The stamp has 16 heads. 70 men, 10 females, and 12 boys employed.

The present workings commenced about 15 years ago. Of late the Company have sustained a small loss. A few years ago they received dividends. An advance of a few pounds per ton on tin would enable them to pay cost of working. Their perseverance deserves better results than those hitherto experienced. Better days, probably, await them.

### ST. IVES WHEAL ALLEN,

in the Parish of St. Ives, Cornwall, in 900 shares. *Purser*, Mr. T. W. Robinson, Penzance. *Manager*, Captain Jno. Nancarrow, St. Ives. *Landowners*, Earl of Mornington and Duke of Cleveland. Dues, 1-18th. Adit, 18 fathoms deep. Bottom of mine, 58 fathoms under adit. The rock is granite. Pumping-engine, 30-inch. Stamping-engine, 18-inch. 55 men, 8 females, and 7 boys employed.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Black tin ...	23	10	3	9	for	1,368	16	1

The Company commenced in December, 1860, and their prospects are good. The mine adjoins the western side of St. Ives Consols, whose former riches are patent to the world.

### WHEAL OWLES,

in St. Just, Cornwall. *Purser and Manager*, Mr. Richard Boyns, Boswedden, St. Just. *Landowners*, John Usticke Scobell, Esq., and others. Dues, 1-25th, clear. Depth of adit, 50 fathoms. Depth under adit, 140 fathoms. Rock, principally granite. 230 men, 45 females, and 90 boys employed (total 365). 3 pumping-engines, 40, 36, and 30-inches (respectively). Stamping-engine, 30-inch. Four winding-engines, 26, 26, 24, and 20-inches (respectively); 5 water-wheels, stamping tin, diameters 22, 20, 17, 15, and 14 feet.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Black tin ...	227	2	1	2	for	14,786	18	10

Works by present Company commenced in 1834. Outlay was £5,766 19s. 2d. Profits divided, £27,886 19s. 2d. Profit in 1864, £400. The drifts and shafts measure altogether 30 miles, and increase at the rate of a mile per annum.

### ST. IVES CONSOLS,

in the parish of St Ives, Cornwall, in 940 shares. *Purser*, Captain P. H. Aplin, Penzance. *Manager*, Captain John Nancarrow, St. Ives. *Landowners*, Earl of Mornington, Duke of Cleveland, Stephens, and others. Dues, 1-18th. Depth of adit, 20 fathoms. Depth under adit, 177 fathoms. Rocks, granite and clay-slate. 218 men, 59 females, and 104 boys employed. 2 Pumping-engines of 50 and 30-inch respectively. Stamping-engine, 26-inch (52 heads). 2 Winding-engines, 20-inch and 18-inch. 5 Water stamping mills (36 heads).

#### MINERAL SOLD IN 1864.

		Tons.	cwt.	qrs.	lbs.			£	s.	d.
Black tin	...	246	13	0	11	...	for	...	13,911	1 4

The late Mr. James Halse, M.P., made a fortune out of this mine. The workings (except "old men's" workings on the back of lodes to adit level) commenced in 1818. The amount divided is £490 10s. per share. Total outlay £8 per share.

This great mine is worthy of consideration on every point. Its development was commenced by one of the most enterprising of Cornishmen, Captain Hodge, the bosom friend of Captain Trevithick. Its lodes being enriched by carbonas, or extraordinary excrescences of ore in the sides, it has held its course for nearly half a century, through evil and good report, never deceiving old or new investors, and is now the favourite mine both far and near, as a security for money. One of the above-named "carbonas" yielded scores of thousands of pounds worth of tin. It required a forest of timber to support its roof, which caught fire, and burned for many days. I believe that since then nothing has been done in this place, owing to the collapse of its sides.

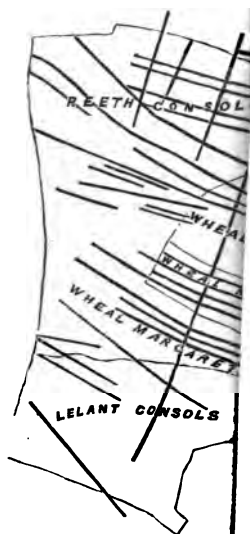
### ROSEWALL HILL AND RANSOM UNITED,

in the parish of Towednack, Cornwall, in 6,000 shares. *Purser*, Mr. Thomas Treweeke, Jun., Lelant. *Manager*, Captain Treweeke, St. Ives. *Landowner*, William B. Tyingham, Esq. Dues, 1-18th. Adit, 30 fathoms. Rosewall Hill, 170 fathoms under

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adit. Ransom, 130 fathoms under adit and shaft now being sunk.  
Rock, granite. Pumping-engine, 40-inch. Stamping-engine,  
32-inch. Winding-engine, 24-inch. 120 men, 20 females, and  
30 boys employed. This mine is situated to the west of St. Ives  
Consols and on the same lodes. It is hoped similar results will  
be realised. The district is good for tin; the management in  
safe hands; and I believe the property contains the elements of  
success.

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## MINING DISTRICT FROM HAYLE TO TRURO.

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THE second division of the mining district of Cornwall commences at Marazion on the south side, and Hayle on the north, at a point where there are none of those grand escarpements of rock that characterise the Land's End division. On the contrary, here everything is comparatively level and sober, and it has often been in contemplation to cut a canal through this short isthmus of four miles meridianally, the land only rising 40 feet above the level of the sea; in order to avoid the dangerous voyage (especially in winter) of weathering the Land's End, where so much of life and property are continually lost. This low ground is occasioned by the junction of the clay-slate and granite, and a sort of general concentration of the trap rocks. The great greenstone dykes of Camborne and Gwinear, with the accompanying elvan courses, pass through this narrow neck of low ground, and here the clay-slates are massed from one side of the peninsula to the other. The granites on the south side are thrown up to a comparatively considerable height at the Godolphin hills, but they are rounded, and bear little resemblance to what are sometimes called the igneous rocks. They are comparatively rounded, like the clay-slate hills, in the general outline, and bear little of the serrated angles of the great mountain chains of the world, when the melted rocks appear. This isthmus seems to be guarded by two champions of granite; on the south side is the Mount of Saint Michael, rising like a pyramidal giant out of the sea, and Atlas-like bearing an immense mass of clay-slate on its shoulders, and the great Norman Castle of the ancient Cornish family of the St. Aubyns as its head. This ancient stronghold, fortified by sea and rock, submitted its strength to nobody; and there are the old armour and iron, and in curious cabinets the old skulls and bones, that defended it, grinning ghastly, but as fresh as when they were called, to the combat or engaged in the defence, are preserved in the castle, to remind us of their prowess. This mountain was evidently the island referred to in ancient history, as the *Ixis* to which the tin was, ages back, carried in carts, when the subsiding of the tides allowed it. But the very mention of this dispels old illusions, for we are taught to believe, by tradition, that many abbeys were built by the process of passing the building

~~case~~ part of our island. It is not my province to say anything

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Published in the month of June  
A complete list of the various  
types of stainless steel tubes

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that many abbeys were built by the process of passing the running

stone from hand to hand from the quarry to the buildings as if our ancient friends did not know how to build, or where to burrow; while the Roman historians maintain that they were famous in building chariots, and in driving them too, and that they delivered the tin to this seaport in wheel vehicles.

On the north side rises the granite rampart of Saint Ives Head. The waves of the Atlantic wildly assail this giant sentinel, although, according to all modern observation, they make little progress; but if they succeeded in making the western sands into an island, of which Penzance would be the metropolis, and the channel from Marazion to Hayle the straits, similar to the separation of the Island of Anglesea from Wales, good-bye to the fame of Land's End. Tradition states that the ground around St. Michael's Mount, formerly, in Celtic, called the Hoar Rock in the Wood, sunk down; the same tradition exists as to the Cardiganshire Bay, which it is said sank down at some early period, of which the Welsh think they have reliable memoranda, that the sunken ground was called the *Cantref-ar-gweilod*, or low ground, more correctly translated the Bottom Country, and became overwhelmed by the sea. With reference to Cornwall, they say that Newlyn means the Nine Lakes, and that is evidently the Celtic meaning of the word; that these lakes formed a piece of low ground which was afterwards flooded by the sea, and that the leaves of woods and trees once on the land are often visible, as well as ancient walls under the bed of the sea. Whether this be true or not, it is unquestionable that the action of the sea is counteracted by a subterranean action that raises the land,—consequently, these powers are antagonistic, sometimes one prevailing and sometimes the other. From these results, the product of the ocean is stereotyped in the rocks of the land, and if this particular county of Cornwall is examined at the Boat Cove in Perranuthnoe, the evidence of this raising of the sea shore will be found three or four times in comparatively small lifts of a few feet together. This alternation upon the crust of the earth, of sea and subterraneous lifting action, properly considered, would account for many of our geological dilemmas and difficulties; for if we examine the top of Snowdon, the highest mountain in England or Wales, we shall find comparatively modern sea shells petrified at the summit, showing that the great elevations of England, and probably England itself, are only modern phenomena in the geological history of creation.

After this geological digression, I may proceed to remark that the beautiful and salubrious town of Penzance, the Mont Pellier of England, lies only three miles in the Mount's Bay, to the west of St. Michael's Mount, and forms the safest shipping port in this part of our island. It is not my province to say anything

of the mines while describing the country in proceeding eastward. The ground rises from this narrow isthmus to the eastward, entering upon the slaty rocks of Gwinear on the north, and Breage on the south. In Gwinear the lodes are full of copper; in Breage of tin, that being a mining parish in the broken granite. Granite being of two descriptions—that which forms the unbroken arching or crust of the earth, and that which has been lifted by the action of the subterranean gases, and forms the stratum of our metalliferous ground. From Gwinear, four miles eastward brings us to the Camborne district, the western part of Carnbrea. Here the first evidence occurs that the metals depend upon the junction of the slates and the granites. The ancients, whether Phœnicians, Hebrews, or Romans, must have witnessed the great deposits of metals surrounding the Carnbrea Mountains, and come to the conclusion that here or by this condition of the rocks originated the copper, the great element of the brass of the old world. Around that mighty eruption lie a hundred paying copper and tin mines, and thousands upon thousands of happy miners live in the cottages built of their native rock, the indestructible granite, and covered with the ancient slates of Wales, some millions, nay, probably, trillions of years older than the period that saw the eruption of the granites, although the granite crust of the earth is, in all probability, millions of ages older than the clay slates, even the first film of clay slate that was ever laid down in the depth of the ocean, and before the earliest germ of organisation either of plant or animal existed—when even the form of the Molux and Trilobite was unknown, except in the great book of the Creator. Around this granite hill are hundreds of mines, but many of them have only been found in our own day. The old adage that mining is for all ages but not for all men, and the Spanish proverb that *mina cuesta mina*, are certainly true, and will never be extinguished by the progress of science; although I believe science—that is, the elements in the power of man—will enable us to deal with the crust of this earth in a manner far different from that in which it has ever been dealt with—perhaps even down to the foundation of the rocks—just as we now deal with distance on the surface of the earth. With reference to distance, we have obtained a formation that by increasing the size of our materials we may travel as fast as we like; this must be as true in machinery as the comparison of ratios or multiples in mathematics. The whole of this reasoning applies to the Gwennap, as well as to the Redruth and Camborne districts, with the exception that it is very probable that the despised ground between Gwennap and Truro may after all, in future epochs, be the richest mining ground in Cornwall. It has been the custom in the county—of course I mean Cornwall—to

treat this ground as a worthless waste or dross, because only the oxides of the great masses of metals attached to the granites appear at the surface. Witness Wheal Jane, literally the black rock in which the oxides of tin and copper crop up to the top, and the sulphides and sulphurets of iron, in the shape of iron pyrites, mixed with a small quantity of gold, the fragments of which are found formed into lumps by agglomeration in the Carnon stream. It is apparent from the accumulated evidence of metallic lodes that immense bodies of tin and copper must exist hundreds of fathoms below these oxidized rocks, and it is only the weakness of man, or the fulfilment of the orders of Providence, that prevents him going down and establishing the richest and most profit-giving mines hundreds of fathoms deeper. It is now pretty clear, that bodies, masses, or mines of metal, are generally situate at a depth on the rock, of which the human intellect had formerly no definite conception, although by proverbs man foreshadowed the truth.

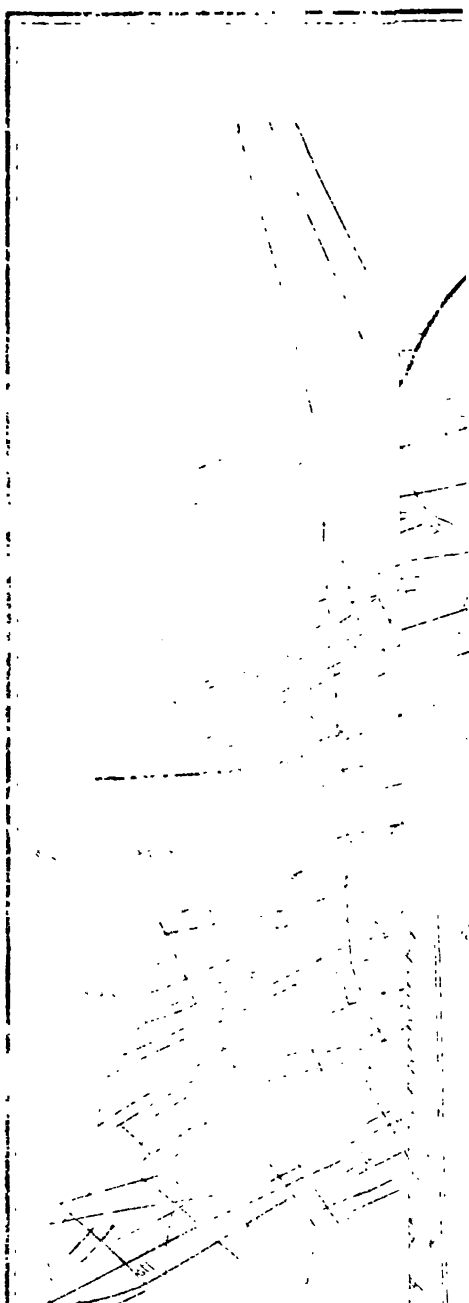
I have now gone over the second division of the mining deposits of Cornwall, beginning at Hayle and closing at Truro, glancing but slightly at the south part, as being less disturbed and only to a certain extent cupriferous. This ground mostly yields tin, and granite for building, and is by no means to be despised. On the far south at Helston the slates yield lead in some quantity; the granite surrounding Helston, although not sufficiently disturbed to give great returns of tin at the surface, yet in places yields it in paying quantities; and in depth in all probability the lodes will be well filled with bodies of nearly solid tin, or at any rate with such quantity as to repay coming generations for the machines they may construct in those future times to work the ground to great depths. Around Falmouth there are famous granite quarries, but these in theory only prove that the country is impoverished, or rather that the metals are withheld for mining, as where the granites are whole and intact, and concentrated in their chemical arrangements and combination, generally speaking little of the useful metals exist. So it is that everything at the surface and underground has its value for man,—the granite to form the arch of his grandest and most lasting monuments, which apparently deoxidizes nothing, and all structures built of it will last, in the earthly sense of the word, for ever. And the glorious, the beautiful metals, the rainbows of life, meeting us at every moment in our path—the sheen of the silver, the primrose-like ray of the gold, the origin or basis of which appears from Bunsen to be iodine; the dull, heavy, and somewhat iris-like hues of the copper; and the pure light and crimson accessories of the tin, for which the Phœnician gentlemen travelled so far to adorn their “ladye loves,” who longed to be arrayed in its purple, as ours do in



magenta. How much of the beauties of artificial life do we owe to these exquisite metals, in their substance and in their oxides and chemical combinations! What could we as civilised men have done without these metals, where would have been the steam-engine, the iron horse, the iron magician that beats time? Where would have been the radiant colours of our rooms—our chandeliers, and the decorations of modern civilisation, the comfort of the poor, the grandeur of the rich, the symptom of progress to the backwoodsman, the envy of the savage—in fact, the civilisation of this planet?

### CLIFFORD AMALGAMATED,

in the parish of Gwennap, Cornwall, in 1,880 shares. Wheal Clifford was marked out on Cosgarne Common in 1833, and it worked under that name about 25 years, and proved a very profitable mine. It was bounded on the west by the United Mines, which consisted of Ale and Cakes, East Ale and Cakes, Poldory, and Cupboard Hill Mines, also of Wheal Squire at the west; but in the last named mine the company did nothing. Owing to the poverty of the United Mines a few years ago, that company intended to abandon them, for they were losing from £500 to £1,000 per month. The adventurers in Wheal Clifford well knowing that the stopping of the engines in those mines would be followed by an influx of water into their mine to such an extent as to compel them to abandon it also, proposed to amalgamate the two companies, which they did on terms satisfactory to both. Since then, finding that the water would find its way through the ground from the Consolidated Mines, which was also abandoned, they have purchased a large engine there, and other machinery, and the sett of these mines. The engine is kept at work to drain the mine to about the 80-fathom level, but I believe little is done in the sett. The Consolidated Mines consisted of Wheal Virgin, West Wheal Virgin, Wheal Girl, Wheal Fortune, and Cusvey. The company have also taken Wheal Andrew, previously called "Union Mines," and previously to that "Wheal Friendship." The union of all the above-mentioned mines constitute Clifford Amalgamated, the largest mining concern in Cornwall at the present time. Wheal Vor possibly was larger, under the old company, but at present it is much smaller. I think there is more steam machinery on Clifford Amalgamated, than is to be found on any other mine in England. They have 11 pumping-engines, many winding-engines, and engines for other purposes. This mine is now paying about 8 per cent. per annum to the shareholders, the capital is about £85,000, and more than that amount has been paid back in dividends, and according to the selling



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has been paid back in dividends, and according to the selling

price the mine is now worth something more than the total investment.

The *Pursers* are Messrs. Williams, of Scorrier. The monthly expenditure is about £5,500. The *Manager* is Captain John Richards, who formerly managed the Consols. The *Landowners* are Lord Clifford and Lord Clinton, representatives of H. P. Andrew, Esq., Beauchamp family, &c.

Some 30 years ago, by means of the part of these mines called the Consolidated Mines, a great lesson as to liberality was taught to the landlords of mines. The tenants had frequently called upon the lords to renew the leases, but they delayed or deferred to grant from time to time, until only four years of the term remained unexpired, and there was a quantity of 30,000 tons of ore in reserve in the backs of the different levels, of which the landlords would have profited, had not the energetic management taken a course that defeated their object, they erected two drawing engines on many of the shafts, and commenced to peck the eyes out, which brought the lords to reason, but the mine was injured for ever.

In order to show the onerous nature of the work of compiling and furnishing mining statistics, I may mention an incident connected with this mine; my Agent called upon the manager, who unlike the urbane sons of the Cornish soil in general, positively refused to give any information, and he had to obtain it in spite of such churlishness. I think, possibly, the account I offer of the mines is fuller, more lucid, and contains more intelligence, than anything we could have extracted from the manager, but this is no excuse for the false secrecy of that functionary, for I hold the more mining is ventilated the better, and the more secrecy that is observed about its affairs the greater the danger to the mining community. Some of these mines have realised £47,000 a year, in a capital of £100,000, or 50 per cent. per annum as investments, until they were destroyed by the cupidity of the landowners, who made an unsuccessful attempt to circumvent the miner.

### CARN BREA,

in the parish of Illogan, Cornwall, embraces several old mines, which were set to work by the present Company in 1831. They are divided into 1,000 shares, on each of which £15 was paid, and on each more than £280 has been received in dividends; so that more than £280,000 profit has been made by the Company. This is another instance of successful adventure in mining. The *Pursers* are Messrs. R. H. Pike & Son, Camborne. The *Manager*, Captain Jno. Daw, Redruth. The rocks are granite

and clay-slate. Persons employed, 802; viz., 582 men, 129 females, and 91 boys. *Landowners*, J. F. Bassett, and Charles Scott, Esqrs. Dues to Bassett, 1-19th; and to Scott, 1-18th. Depth of adit, 30 fathoms. Under adit, 220 fathoms. The pumping-engines, 76, 60, 50, and 36-inches respectively. The stamping-engines, 33 and 26-inches respectively. The winding-engines, 25, 25, 24, 24, 21, and 18-inches respectively. The crusher, a 24-inch engine. For capstans, two 8-inch engines.

#### RETURNS IN 1864.

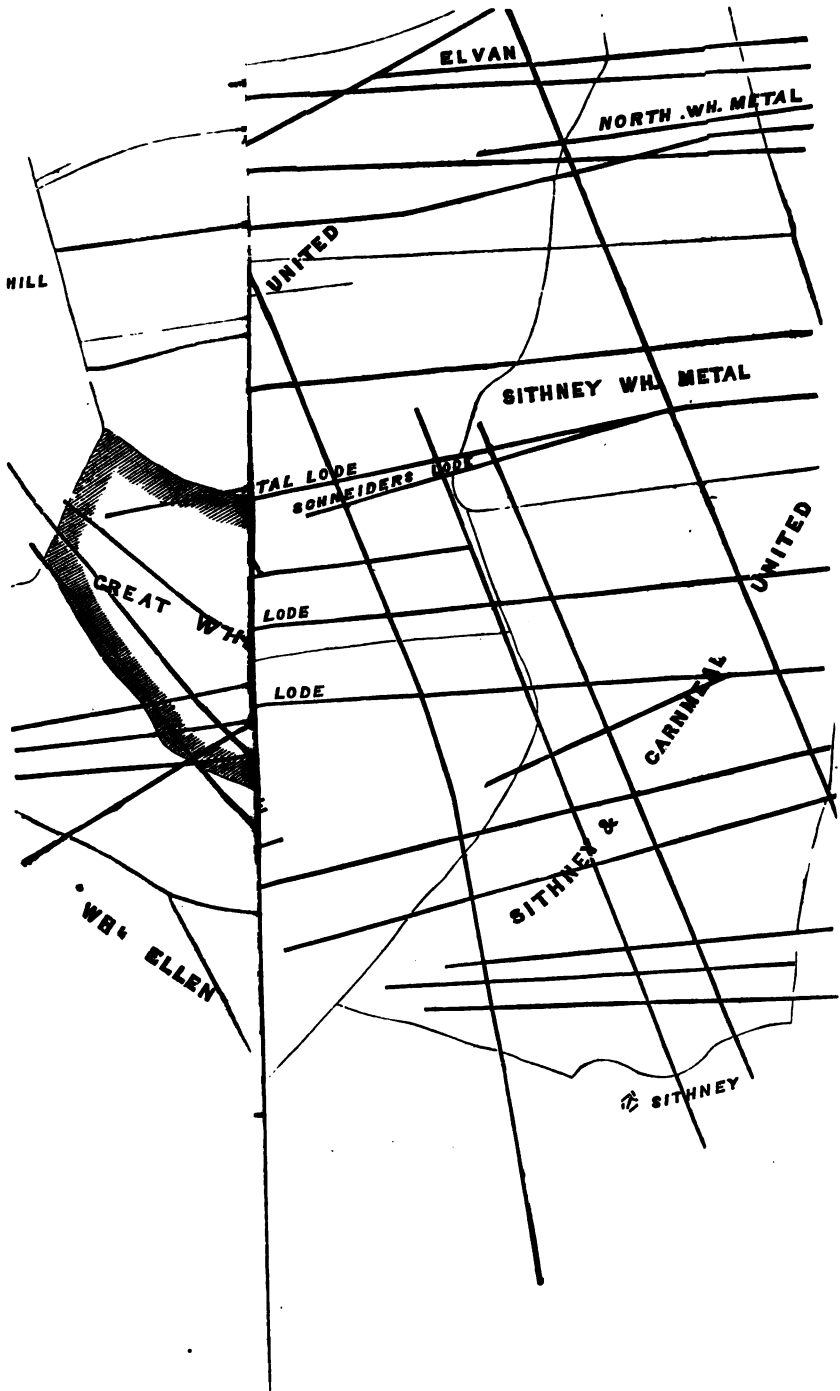
	Tons cwt. qrs. lbs.						£	s.	d.
Copper ore ...	1,982	7	2	0	...	sold for ...	10,077	0	5
Black tin ...	513	7	3	17	...	„ ...	80,559	10	6
Arsenic ...	210	11	0	0	...	„ ...	122	16	8
							<hr/>		
							£40,759	7	7
							<hr/>		

The operations at first, and for many years, produced copper only, but latterly tin has been the chief produce, as in Tincroft, Cook's Kitchen, and Dolcoath at the westward. In Carn Brea the paid-up capital was £15,000; the divided capital, £280,000; so that nearly twenty times the total investment has been given back by this famous property to the investors, and yet we find people unsatisfied with the capabilities of mines, and denouncing everything connected with them as bad. Why, here is an investment that has paid 90 per cent. during the twenty years it first worked after getting into profit, paying back in the first year of profit the capital in full. If those who grumble at mining would only fairly invest their money in it, instead of giving it to the bulls and bears to play shuttlecock with, they would soon be able to tell a different story, and to show a far better account with reference to it in their banker's book.

#### EAST POOL,

in the parish of Illogan, Cornwall. *Secretary*, Mr. William Prisk, Illogan. *Manager*, Captain W. S. Garby, Redruth. The southern half of sett in granite, other part in killas. 170 men, 90 females, and 92 boys (total 352) employed. *Landowner*, Mr. J. F. Basset. Dues, on copper 1-15th, on tin, 1-24th. Depth of mine to adit, 18 fathoms. Depth of mine under adit, 170 fathoms. Workings commenced in February 1835. Profit on the working, £50,688. One pumping-engine 60-inch. Two winding-engines of 18-inch each—one of which is also a crusher. Four water-wheels, lifting 56 heads, stamp the tin.

# DISTRICT.



A20

## RETURNS FOR 1864.

	Tons	cwt.	qrs.			£	s.	d.
Copper ore	2,814	16	2	...	sold for	...	9,758	11 3
Black Tin	128	18	3	...	"	...	7,512	11 7
Mundic	133	0	0	...	"	...	118	0 0
Wolfram	3	0	0	...	"	...	13	19 0
							<hr/>	
							£17,403	1 10

This mine is "little and good." The dividends will show what it has done.

The mine is divided into the Old Cornish multiple of 128 shares upon which £24 5s. has been paid, making the capital £3,104, and the dividends have already been £50,688. So that everyone of the shareholders that paid £24 5s. has received back from the mine £369, 10s., or £12 a year for 30 years in £24—50 per cent. Such facts stand up as evidence of the great worth of mining as a security for money, and of its value as an item in the wealth of the nation, that sets all cavilling at defiance, and proves irresistibly that if people lose money in mining it is less the fault of the mines, than of their own stupidity.

## GREAT WHEAL METAL (LIMITED),

in the parish of Breage, Cornwall, commenced working in October, 1864, under the able management of Captain Wm. Chappell, of Breage, near Helston. *Offices*, Gresham House, London. *Lords*, John Jope Rogers, Esq., and Rev. H. M. St. Aubyn. Dues, 1-18th. Depth of mine, 10 fathoms; no adit in present works. The Great Wheal Vor lodes (Wheal Metal) run through this mine, and the operation on one of these has been most successful. The lode is worth from £10 to £30 per fathom for tin, and for a length of 200 fathoms the lode has been found of the same character; so that the Company may congratulate themselves on the possession of a valuable property. An engine is about to be erected for draining the water to enable the men to follow the tin ground below the present level, where the water prevents any effectual exploration. The detection of these outcrops of metal in the district, and in contiguity with Wheal Vor with some of the Wheal Metal lodes which produce £500 worth of tin to the fathom, in a sett forming a body of ore richer than the richest part of the richest gold lode ever discovered, is a guarantee that this will speedily become one of the lions of the tin country. Few have any notion of the riches conveyed in the words £500 per fathom. It is like the power of going



into a bullion warehouse, and for the payment of a banknote for £5, being allowed to take away 500 sovereigns. It is, in point of fact, paying £5 for £500 worth of goods, for, doubtless, £5 would be a fair price for stoping away the richest parts of the Great Wheal Metal lode. It must be borne in mind that this mine is in its complete infancy, and that where Captain Chappell has found the tin, in two places 120 yards apart, the shafts are only 10 fathoms, if so much as that, under the surface.

### SITHNEY AND CARNMEAL UNITED,

in the parish of Sithney, Cornwall, commenced in January, 1860. *Purser*, Mr. Fredk. Hill, Helston. *Manager*, Captain Wm. Chappell, Breage. *Proprietor of the Land*, Sir Samuel Spry. Dues, 1-18th. Rock is clay-slate. Depth of mines at adit, 16 fathoms, under adit, 120 fathoms. 70 men, 15 females, and 12 boys (total 97) employed on the works. Pumping power, 60-inch steam engine. Stamping and winding engine, 24-inch, stamp-head, 16.

#### BLACK TIN SOLD IN THE YEAR 1864.

11 tons 18 cwt. 1 qr. 23 lbs. ... sold for ... £706 6s. 0d.

The Company have persevered in their operations against many discouragements; but they are likely to be rewarded. As the works deepen the lodes improve, which was the case in the adjacent mine of Wheal Metal (Great Vor) where the lode is worth hundreds of pounds per fathom. The analogy between the mines justify similar results. The rock of this country has yielded more immense deposits of tin than any other in the world, the locality is all that theory could desire, the agent, Captain Chappell, is a clear-headed experienced miner; with such elements, it would be unwise to doubt of success. The great drawback is the great fall in the price of tin in the last two years, which has produced lamentable disturbances in the very best estimates that could be made in mining for this metal.

### HALLENBEAGLE,

in Kenwyn, Cornwall, in 6,000. shares. *Secretary*, Mr. Edw. King, 22A Austin Friars. *Manager*, Captain Edw. Richards, St. Agnes. *Lord*, Viscount Falmouth. Dues, 1-24th. Depth of adit, 50 fathoms. Under adit, 50 fathoms. Pumping-engine, 60-inch, at work. Winding-engine, 22-inch, at work. 70 men, 37 females, and 30 boys employed; total, 137 persons. Rocks, clay-slate, and elvans.

## COPPER ORE SOLD IN 1864.

737 tons 14 cwt. 0 qrs. ... sold for ... £4,282 10s. 6d.

The present Company commenced operations in 1864, and the time has been occupied in preliminary works chiefly. This sett was a part of Great Wheal Busy United. The prospects are good. The name "Hallenbeagle" was, a few years ago, the name of the mine now called "Boscawen." Great Wheal Busy was so very large as to render a tripartite division desirable, and that has been accomplished. This seems to be a fair speculation in a great mining county; nevertheless, the granites are rather too far in the background to render this site a fancy locality; scientific geology seems to point to depth as the goal of success for the Great Busy range of mines.

## EAST WHEAL LOVELL,

in the parish of Wendron, Cornwall, in 1,906 shares. *Purser*, Mr. Henry Rogers, Helston. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of adit, 3 fathoms. Depth below adit, 44 fathoms. 46 men, 8 females, and 9 boys employed. Works commenced in 1857. Pumping-engine, 36-inch. 3 water-wheels lift 16 stamp-head. This is a mine in which capitalists should deal cautiously because of the very fluctuating character of the lode. They have had, and still have, a rich bunch of tin, but no dependence can be placed on its long continuance; still the great riches of the bodies of ore, and their power of giving large profit while they continue, evidently indicate this to be an extraordinary mine, and possibly we ought not to be too positive in counselling against investing in it. There are few mines that can boast of deposits of ore of such great value per fathom, and the district comes under the influence of the best practical laws known to the miner.

## BLACK TIN SOLD IN THE YEAR 1864.

70 tons 1 cwt. 1 qrs. 9 lbs. for ... £4,263 14s. 5d.

## WEST STRAY PARK,

in 1,056 shares, in Camborne, Cornwall, immediately adjoining Stray Park, commenced working about the year 1850. Messrs. R. H. Pike and Son, *Pursers*. Captain Joseph Vivian, North Roskear, *Manager*. 25 men, 17 females, and 3 boys employed. Owner of land, Mrs. Pendarves. Dues, 1-18th. Depth of adit, 37 fathoms, under adit, 102; but not drained under the 50 level from inadequacy of steam power, which consists of a 24-inch rotary engine.

## RETURNS OF COPPER ORE IN 1864.

146 tons ... .. sold for ... .. £1,202 15s. 5d.

I have no doubt that this mine would become profitable if the manager were supplied with the needful funds to provide an engine of suitable power to drain the mine. It is ridiculous to expect any successful results under the present mode of working. Instead of the 24-inch, there ought to be a 60-inch engine erected for pumping; and the present engine should be applied to drawing the ores and *debris*. The mine is in clay slate, but near the granite range. This is an apt example of the sort of mining of which the world complains. Here is a mine starved, that, if treated with proper generosity, would probably pay the shareholders in the same ratio as the other great mines of the Camborne districts, yet for want of larger outlay, it is at present unproductive.

## EAST WHEAL ABRAHAM,

Copper mine in Crowan, Cornwall, in 9,600 shares. *Secretary*, Mr. H. Wills, 1 Winchester Buildings, London. *Purser and Manager*, Captain Henry James, Redruth. Rocks, granite and killas. Four men employed. *Landowner*, Rev. H. M. St. Aubyn. Dues, 1-18th. Depth of adit, 37 fathoms on Wheal Abraham, main lode. The Company are operating at the bottom of this adit. They commenced in September, 1864. No returns as yet. Great confidence is felt in regard to returns in future, because of the mine being adjacent to Crenver mine, and its having that rich lode; but I believe all the levels in Crenver became poor as they went eastward.

## NEW BURRA-BURRA,

in Kenwyn, Cornwall. A copper and lead mine, most promising, but idle, owing to the large interest the manager held in it, who was unwilling to expend the necessary sum to develop the lodes.

## NORTH WHEAL BUSY,

in Kea and Kenwyn, Cornwall. Went down with a loss about three years ago. Products, tin and copper.

## NANCEGOLLAN,

in Crowan. Worked a few years under the management of Captain Nicholas Vivian, but the tin was insufficient to cover costs. Idle about 10 years.

## NEW WHEAL FRANCES,

in Crowan, was once a promising mine, but stopped working about 3 years ago.

## NEW WHEAL VADDON,

in St. Hilary. Tin. Idle.

## CATHEDRAL (GWENNAP),

has been idle many years.

## LAMBO,

is the name of an old mine that worked 50 years ago, now idle. It is situated in Crowan, and is now, I believe, a part of Wheal Tremayne sett.

## BINNER DOWNS, .

in Crowan, idle, and has been so about 30 years.

## BULLER AND BASSET UNITED,

in Wendron. Idle, after many years' trial. This mine is eligibly situated, and deserves a deeper search on the lodes, which are numerous.

## ALFRED CONSOLS,

in Phillack, was a rich mine, but is now defunct, owing to the water in Great Wheal Alfred pressing back into it, but if both mines were worked together and well managed, there is every evidence that they would pay well. The value of the shares has ranged from low to high and high to low, several times. The land is the property of several lords, including Mr. Gregor, Mr. Nicholls, &c. The total sum divided as profit about £100,000, which was prior to 1860.

## LEWIS,

in St. Erth, Cornwall. During the management of Captain Reed, about met the current cost. When the property changed hands he was superseded, and the mine was carried on at a loss. When tin was high the returns would pay, under careful and intelligent management. I expect to see these mines at work again.

## NORTH CONSOLS,

in St. Agnes. Idle 25 years. Poor.

## GREAT WHEAL ALFRED,

Copper mine, in Phillack, during the first working yielded a profit of about £100,000. It ceased to work in or about the year 1820. In 1824, Messrs. Taylor took it in hand, worked it two or three years, and gave it up with a loss of about £80,000. Afterwards (about 15 years ago), others took it up, and went out about two years ago, with a much larger deficiency.

## GREAT WHEAL BASSET,

in Illogan, in the land of Mr. Basset. Idle.

## HENDRA PETER,

so called from the estate (Hendra), and the lord (Peter), in Perranzabuloe. Nothing doing there.

## HALLAMANING, AND CROFT GOTHAL,

Copper mines, in St. Hilary, Cornwall, yielded profit many years ago, during the first working, but the last working was disastrous to the pockets of the shareholders. Idle about five years.

## GURLYN,

Tin and copper mine, in the parish of St. Erth. After a second or third working, has again been abandoned. It is in the land of Mr. Gregor, and lies westward of, and adjoins, Lewis Mine, which is also idle.

## WHEAL MUSIC,

in St. Agnes, Cornwall, once rich; has been idle many years. In land of H. Williams, Esq.

## WHEAL UNITY (ST. DAY.)

gave a profit of £360,000. Now a part of St. Day United. Idle.

## WHEAL TREASURY,

Crowan, once rich, now idle.

**WEST ROSEWARNE UNITED (PREVIOUSLY CALLED  
GWINEAR CONSOLS),**

always poor, particularly last working. No returns. The late Captain Wm. Richards, the manager, said that it was the poorest mine he had ever seen.

**WEST TREASURY,**

in Crowan, Cornwall. Rich at one time; ceased to work about 6 or 8 years ago.

**WHEAL WELLINGTON,**

Camborne; idle. Now included in Roskearnoweth sett.

**WHEAL SPEEDWELL,**

St. Agnes, an old, small, idle mine.

**WHEAL SPEEDWELL,**

Breage, idle. Deserving another trial.

**WHEAL NELSON,**

Camborne, idle. A powerful engine erected, but little used. The ground is deserving of a fair trial.

**WHEAL UNITY (GWINEAR),**

in 6,000 shares. *Secretary*, Mr. John Watson, George Yard, Lombard Street. *Manager*, Captain W. H. Reynolds, Redruth. Rock, clay-slate, traversed by elvans and cross courses. 45 men, 4 females, and 5 boys employed. *Landowners*, J. W. Buller, Esq., and Rev. M. N. Peter. Dues, 1-15th (too high). Depth of mine 70 fathoms. No adit. Stamp power, a 40-inch pumping-engine. The workings, where now carried on, commenced in 1862. In other parts of the sett the workings were of ancient date. The loss, up to end of 1864, was about £7,000, of which about £3,000 was expended in 1864. The old mine was abandoned in 1862, when operations commenced on Rosewarne Consols lode. They are down to the 70 level, where there is a long run of ore ground.



This mine was worked for the first time about forty or fifty years ago ; but the present Company commenced in 1860. They will not require any steam power for some time, having the river Looe close by, and at command.

### WHEAL TREMAYNE,

in the parish of Gwinear, Cornwall, in 2,044 shares. *Purser*, Mr. J. W. Field Marazion. *Agents*, Captains Rd. Williams, and John Williams, at the mine. *Lords*, Duke of Leeds, John Nemyne, Esq., and others. Dues, 1-20th. Rock, clay-slate. Depth of mine at adit, 27 fathoms. Under adit, 153 fathoms. 115 men, 36 females, and 38 boys employed. Steam-engines pumping water, one 60 and one 50-inch. Stamping-engine, 20-inch, lifting 24 heads. Winding-engine, 20-inch.

#### MINERALS SOLD IN THE YEAR 1864.

		Tons cwt. qrs. lbs.					£	s.	d.
Black tin	...	157	18	0	6	... sold for	10,438	3	1
Arsenic	...	30	11	0	0	... „	19	1	6
							<hr/>		
							£10,457	4	7
							<hr/>		

This mine commenced about thirty-five years ago ; sometimes it has been worked at a profit, and sometimes at a loss ; the loss in the year 1864 was about £400, but a little rise in the price of tin would have given a balance in favour of the Company.

### ROSEWARNE CONSOLS,

in the parish of Gwinear, Cornwall, in 4,026 shares. Commenced working November, 1855. *Purser*, Mr. Thos. Hollow, Lelant, near Hayle. *Manager*, Captain Thomas Uren, Lelant. *Agent*, Captain James Berriman. *Landowners*, J. W. Buller, St. Aubyn and Peters. Dues, 1-18th. Persons employed, 71 ; viz., 46 men, 24 females, and 1 boy. The late Mr. Jas. Hollow set this mine to work in a piece of land, a common which had never been tried except by what are commonly called “costeen pits,” by which the directions of the lodes were traceable. There has been a loss on the whole working, but in the year 1864, there was a profit of £530, and the prospects are good.

### WEST FRANCES,

(in 512 shares) in the parish of Illogan, Cornwall. *Pursers*, Messrs. R. H. Pike & Son, Camborne. *Manager*, Captain Charles Thomas.



*Mineral Owner*, Lord Fortescue. Dues, 1-18th. Adit, 8 fathoms deep. Depth under adit, 90 fathoms. Pumping-engine, 58-inch. Stamping-engine, 30-inch, and winding-engine, 16-inch. A *poor* company would have abandoned this adventure many years ago, but this company, being wealthy, and confident of ultimate success, has carried on the works for a period of 15 years, the greater part of that time against the most adverse circumstances. Perseverance is likely to have its reward. The returns have gradually increased of late years, and at no distant period it is presumed the mine will follow its neighbour, West Basset, in the declaration of dividend. West Basset lodes run through this mine.

### TREWORLIS,

in Wendron, Cornwall, in 2,048 shares. *Purser*, Mr. Henry Rogers, Helston. *Manager*, Captain John Burgan, Helston. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of adit, 12 fathoms. Depth under, 53 fathoms. 30 men employed in the mine. Pumping-engine, 50-inch. Stamping-waterwheel, lifting 8 heads. This mine was commenced by the present company in the year 1858. The expenditure has been about £15,000; of which £4,000 was spent in 1864. The Company intend to prosecute the works more vigorously—as they should have done before—to give a fair trial of the lodes.

### SITHNEY WHEAL VOR LIMITED,

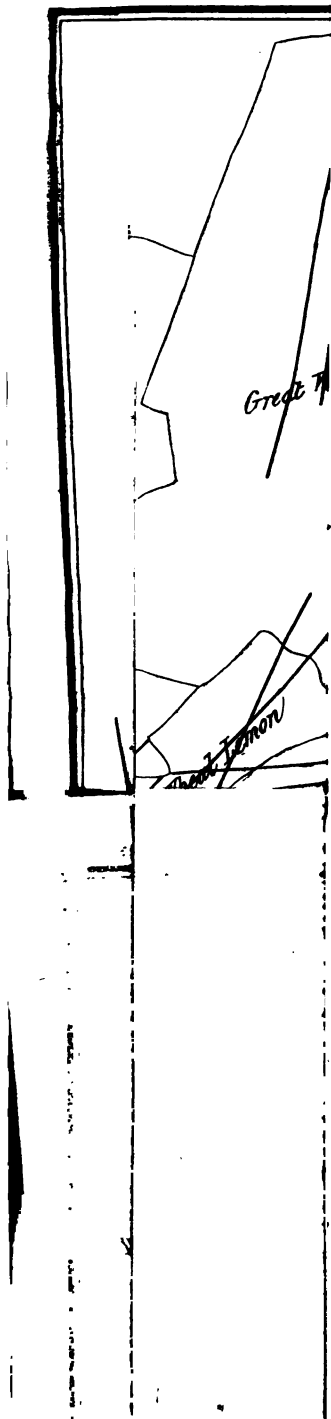
(Late East Fortune), in the parish of Sithney, Cornwall, in 2,000 shares. *Purser*, Mr. William Vawdrey, Hayle. *Manager*, Captain John Curtis, Kenneggy, Breage. *Owners of land*, Peter James's representatives. Dues, 1-18th. Depth of adit, 35 fathoms; not worked under. Six men employed. Workings commenced in 1863. Capital called up, £2,000, £1,000 of which in 1864. There has been a loss of about £1,200 in all,

Tin sold in 1864   ...   ...   ...   ...   ...   ...   ...   ...   £13

This mine is one of the most ancient in Cornwall. The "old men" worked from surface to adit, taking away nearly all the contents of the lode between the walls. The lode is wide, and large returns may be expected from it. There are several other lodes in the sett.

### NEW LOVELL,

in the parish of Wendron, Cornwall, in 4,096 shares. The *Purser* is Mr. P. Grenfell Hill, Helston. The *Manager*, Captain



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Jos. Priske, Porkellis, Wendron. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. 39 men and 2 boys employed in the mine. The rock is granite. Depth of mine from surface, 25 fathoms (no adit). Pumping-engine, 30-inch cylinder.

The workings commenced in November, 1863, in search of tin, for which the district is much celebrated. The prospects of early and abundant returns must encourage the Company to hope for dividends at no distant date.

### LEEDS AND ST. AUBYN,

in the parishes of Breage and Germoe, Cornwall, in 1,019 shares. *Purser*, Mr. Wm. Vawdrey, Hayle. *Manager*, Captain John Curtis, Kenneggy, in Breage, near Helston. *Landowners*, Duke of Leeds, Rev. H. M. St. Aubyn, Carter, and others. Dues, 1-18th, now, 1-36 during pleasure. Depth of mine to adit, 18 fathoms, under that, 30 fathoms. 50 men, 12 females, and 10 boys employed. Rocks, granite and clay-slate. Pumping and stamping-engine, 48-inch.

The works commenced in 1849, and have been generally attended by a loss, but never heavy. The calls for 1864 and 1865 have been 27s. per share.

### .WEST GRYLLS,

in the parish of Perranuthnoe, Cornwall, in 5,000 shares. *Purser*, Mr. Saml. Higgs, Penzance. *Manager*, Captain Jno. Curtis, Kenneggy, Breage. *Landowners*, Messrs. Revelyan, and Jno. Horkin. Dues, 1-18th. Depth of mine at adit, 40 fathoms. Depth under adit, 7 fathoms. Rock, clay-slate. 10 men employed. Works commenced in 1860. There has been a little loss, that of 1864, 1s. per share. (£250.) No steam power.

### RETANNA HILL,

in the parish of Wendron, Cornwall, in 512 shares. *Purser*, Mr. Wm. T. Scott, Falmouth. *Manager*, Captain John Daw, junr., Redruth. *Mineral lord*, Duke of Cornwall. Dues, 1-18th. Depth of mine, 30 fathoms, (no adit). 18 men employed. Pumping (rotary) engine, 22-inch cylinder. Working commenced in August 1863, for tin.

### GREAT WHEAL BADDERN,

in the parish of Kea, Cornwall, in 3,313 shares. *Secretary*, Mr. T. B. Laws, London. *Purser*, Mr. I. M. Visack, at the mine.

*Lord, Viscount Falmouth, 2-3rds, and Messrs. Graham & Vivian, 1-3rd. Dues, 1-18th. Adit, 10 fathoms deep. Depth under adit, 50 fathoms. 58 men, 13 females, and 14 boys employed; total 85. Pumping-engine, 66-inch cylinder. Stamping-engine, 30-inch cylinder. The rocks are clay-slate and elvan.*

## MINERAL SOLD IN 1864:

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Black tin	26	12	3	6	... sold for ...	1,621	5	9

It is much to be regretted that there should have been occasion to draw so much on the Company for funds to carry on these works. They have manifested great patience, but "hope deferred maketh the heart sick."

## BASSET AND GRYLLS,

in Wendron, Cornwall, in 1,000 shares. *Purser, Mr. T. P. Tyacke, Helston. Manager, Captain John B. Wilkin. Landowners, Jno. F. Basset, and T. J. A. Robarts, Esqrs., and Major Grylls. Dues, 1-20th. Depth of mine, 60 fathoms; no adit. Rock, granite. 264 men, 83 females, and 72 boys (total, 419) employed. Machinery:—Pumping-engine, 60-inch. Stamping-engine (also drawing water), 32-inch (double). Winding-engine, 12 and 24 (combined). 2 stamping water-wheels, lifting 20 heads.*

## MINERAL SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.		£	s.	d.
Black tin	...	285	14	1	19 ... for ...	16,794	16	6

This mine is the same as that formerly known under the name of "Porkellis United," which ceased to work a few years ago in consequence of a falling in of the superincumbent ground, burying seven men, whose bodies are still there. The present Company purchased the materials at a cheap rate (in 1859), and resumed working at a little distance from the fallen part, and with good success. The calls have been only £7,000, £3,000 of which have already been returned in dividends. In 1864, owing to the low price of tin, the returns only just covered the costs, but the company have good prospects before them.

## PENHALE WHEAL VOR,

in Breage, Cornwall, in 2,000 shares. *Purser, Mr. P. Grenfell Hill, Helston. Manager, Captain Wm. Chappell Breage. Landowner, Duke of Leeds. Dues, 1-24th. 20 men employed. Rock, clay-slate. The present Company purchased the engine and other machinery belonging to the late "North Wheal Vor"*

Company, whose sett they have also taken, and added thereto some ground at the south, adjoining, and called "Penhale Mine." When Penhale was worked by the Wheal Vor late Company, it yielded good profit, and I have no doubt that it would do so again, if fairly worked. North Wheal Vor having been in the hands of a poor company, has not been sufficiently tested.

### SOUTH LOVELL,

in the parish of Wendron, county of Cornwall, in 2,000 shares. Commenced working in August, 1864, under the management of Captain William Chappell, of Breage. Mr. P. Grenfell Hill, Helston, is the *Purser*; and Mr. Walter Thomson, London, the *Secretary*. The rock is granite, in a decomposing state. 30 men and 2 boys employed. *Lord*, John J. Rogers, Esq. Dues, 1-18th. Depth of adit, 14 fathoms. Depth below, unknown as yet. Pumping-engine, lately erected, 14-inch, high pressure. The prospects, as regards returns of tin, appear from the Managers' report to be very satisfactory. The district is highly stanniferous.

### ABRAHAM CONSOLS,

in the parish of Crowan, divided into 5,000 shares. Commenced working in October, 1864. The *Secretary* is Mr. Rd. Emerson, 9A New Broad Street, London. Mr. John James Climas, Camborne, is *Local Purser*. *Manager and Agent*, Captain Henry Cowling, Berripper, Camborne. 4 men employed. *Landowner*, Rev. H. M. St. Aubyn. Dues, 1-18th. Depth of mine, 4 fathoms, and in sinking that distance, they raised and sold in this month (March, 1865), £13 worth of tin stuff. No machinery yet on the mine, and none is required at present. This mine is in "virgin ground." (Granite.)

### GREAT RETALLACK,

in the parish of Perranzabuloe, Cornwall. *Secretary*, Mr. John Watson, George Yard, Lombard Street. *Manager*, Captain W. H. Reynolds, Redruth. Rock, clay-slate, traversed by elvans. 14 men, 1 female, and 2 boys employed. *Lords*, Captain Retallack, and Major Bull. Dues, 1-18th. Adit now driving, which when completed will be 35 fathoms deep. Depth of mine, 66 fathoms from surface on lode, or 45 perpendicular. Works commenced in 1857. The calls made have been £2 6s. 6d. per 6,000th share. The draught-engine (now idle) is a 22-inch. Blende has been the staple product of this mine, which would

pay the costs when the price was at 60*s.* or 70*s.* per ton; but it varied from the latter sum to 40*s.* per ton, at which price it would not pay for working. They raised at one time 500 tons of this mineral per month. They are now following the blende lode in search of copper.

### EAST ROSEWARNE,

in the parish of Gwinear, Cornwall, in 5,000 shares. *Secretary*, Mr. Edwd. King, 22a Austinfriars. *Pursers* (local), Messrs. R. H. Pike & Son, Camborne. *Manager*, Captain John James. *Landowner*, J. W. Buller, Esq. (heir of). Dues, 1-18th. Adit, 16 fathoms deep. Depth of mine under that, 85 fathoms. Rocks, clay-slate and 2 elvan-courses. 92 men, 30 females, and 7 boys (total 129), employed about the works. Pumping-engine, 40-inch cylinder. Winding and crushing-engine, 22-inch cylinder.

#### MINERAL SOLD IN 1864 :

Copper ore ... 889 tons ... for ... £7,605 18*s.* 0*d.*

The work commenced in 1855. The returns from first to last, with balance in hand and price per share, will cover the whole expenditure. The profit made in 1864 was £1,373 15*s.* 0*d.* There was a balance last meeting, after dividend, of about £780. The dividends have been two, namely, one of 2*s.* 6*d.*, and the other 2*s.* per share. The prospects of the mine are good, both over and under the elvan course.

### GREAT WORK CONSOLS,

in the parish of Breage, Cornwall, is divided into 119 shares. The *Manager* is Captain Stephen Tredinnick, of Helston. A Committee act as *Purser*; their *Secretary* at the mine being Mr. Carter, the accountant who has been there from 1825 till this time. The Duke of Leeds is the *Landowner*. Dues, 1-28th. Rocks, granite and clay-slate. There are 325 men, 76 females, and 93 boys employed; total 494. Depth of mine at adit, 28 fathoms. Under adit, 180 fathoms. Profit on the working (or dividends declared), £19,075 10*s.* 0*d.* Profit in the year 1864, £2,023 11*s.* 3*d.* Engines pumping water, 60 and 26-inch. Stamping-engine, 24-inch. 2 winding-engines of 18 and 15½-inches respectively. The latter is also pumping water from 34 fathom level. There are 3 water wheels lifting 18 stamp heads.

#### SOLD IN 1864 :

Black tin ... 319 tons 5 cwts. 2 qrs. 19 lbs. ... for ... £21,348 8*s.* 4*d.*

This mine was worked at an earlier date than any of which we have record, and it is likely to last longer than the present generation. The sett is very large, and contains many lodes which have been but very partially tested, except at shallow levels, or on the backs, so that there is ample scope for operation for another century.

### NORTH BULLER,

in the parish of Redruth, Cornwall, in 1,024 shares, commenced working in or about 1850. Mr. E. King, 22A Austinfriars, is the *Secretary*. Messrs. R. H. Pike & Son are the *Purser*s. Captain Rd. Pryor, Redruth, *Manager*. Rock, clay-slate, near granite. 20 men and 2 boys employed. The land is partly glebe and partly the property of J. W. Buller, Esq. There is no adit. Depth of mine from surface, 100 fathoms. The pumping-engine is a 36-inch.

This is one of the few mines in Cornwall which have yielded no ores for the market. The calls have amounted to £27 10s. 6d. per share, extending over a period of about 15 years. The situation of this mine warrants better results than the past, and if more energy was applied to the works, better results would probably follow at no distant day. The Management is good.

### NORTH WHEAL METAL,

in Sithney, Cornwall. Late *Purser*, Mr. Burgess, Illogan. Late *Manager*, Captain Gill. *Landowner*, Sir S. T. Spry. Depth of adit, 17 fathoms, bottom of mine, 20 fathoms below adit. Rock, clay-slate.

Black tin sold in 1864 realised £84. Works commenced about 9 months ago, but they are suspended for the present. The main lode in old Wheal Vor runs through this sett, which lies north of Sithney Wheal Metal, and was formerly a part of that sett.

### WHEAL FALMOUTH AND SPERRIES,

in the parish of Kea, Cornwall, in 2,000 shares (originally), now reduced to about 1,600, by relinquishments. A Committee has acted as *Purser* since the decease of Mr. John Tippet, the late purser; Mr. John Pascoe, of Truro, being the *Accountant* and *Pay Clerk*. *Manager*, Captain Wm. Kitto. *Landowner*, Lord Falmouth—dues, 1-20th, reduced, during his pleasure, to 1-40th. 100 men, 50 females, and 20 boys, employed. Depth of mine, 134 fathoms, of which the adit is 30 fathoms. Rocks, clay-slate



and an elvan course. 2 pumping-engines, of 80 and 50-inches, respectively. 2 winding-engines, each 22 inches; one of which crushes the ore. The working of these mines recommenced in 1859; the original workings date back beyond any known record, probably hundreds of years. Wheal Falmouth was worked by the then lord, 35 years ago. The present Company have called up about £14,000, but the returns now cover the current costs, or nearly so. The prospects are improving.

### GREAT WHEAL GRYLLS (LATE ST. AUBYN & GRYLLS),

in the parish of Breage, Cornwall, in 3,072 shares. *Secretary*, Mr. William Watson, Plymouth. *Manager*, Captain Edward Rogers. *Landowners*, St. Aubyn, Trevelyan, Michell, and others. Dues, 1-18th. Depth of adit, 40 fathoms; depth under, 100 fathoms. Pumping-engine, 40-inch. 10 men employed. The tin sold in 1864 amounted to about £100. The drainage of the mine recommenced this year. The mine is in the Grylls district, and contains many lodes, some of which are very slightly opened.

### KILLIFRETH,

in the parish of Kenwyn, Cornwall, in 1,000 shares. *Purser*, Mr. Edward Hawke, jun., Tregulow, near Scorrier. *Manager*, Captain John Tremayne, Wheal Rose, Scorrier. *Lord*, Viscount Falmouth. Dues, 1-20th. Depth of adit, 43 fathoms. Depth under it, 30 fathoms. 30 men employed. Pumping-engine, 12-inch (rotary). Rocks, clay-slate and elvan.

No returns in 1864.

The Company have very recently resumed the works, which were suspended a year or two. They are sinking the engine-shaft, which will intersect the lode at a depth of about 70 fathoms. There are numerous lodes in the sett, which appear to warrant extensive exploration. Great Wheal Busy lies contiguous to this mine, at the east, and Wheal Unity Wood, formerly rich, at the west.

### WEST WHEAL DAMSEL,

in Gwennap, Cornwall, in 256 shares. *Purser and Manager*, Mr. George A. Michell, Redruth. *Agent*, Captain William Thomas. *Landowners*, Trustees of Mr. Pendarves, Miss Reed, Edward Chilcott, Esq. Trustees of William Rashleigh, Esq., and Messrs. Hext, Rodd, & Tremayne. Dues, 1-18th. Depth of adit, 80 fathoms. Depth under it, 60 fathoms. Pumping-engine,

36-inch. Winding and crushing-engine, 22-inch. Rock, granite, Carnmarth Hill.

SOLD IN 1864.

Copper ore ... 2,162 tons 1 cwt. 2 qrs. ... for ... £9,556 14s. 3d.

Works commenced in 1850, and have been successful, the dividends per share having been £53 10s. against £38 10s. called up. A few months ago, the Company purchased Wheal Damsel lease and materials at a reasonable sum; but there is nothing doing there at present. There is a 50-inch engine on that mine, but not working.

### WHEAL JANE,

in Kea, Cornwall, in 512 shares. *Purser*, Mr. Nichols, Gilbert, Truro. *Managers* or *Agents*, Captains Giles and Bray. *Landowners*, Viscount Falmouth and others. Dues, 1-18th. Depth of adit, 50 fathoms; under adit, 74 fathoms. 90 men, 20 females, and 50 boys employed. Pumping-engine, 40-inches; there is also a 50-inch engine on the mine, but not wanted. Stamping-engine, 30-inch, and a winding-engine 24-inch. Rock, clay-slate, intersected by an elvan dyke. This mine, which commenced probably hundreds of years ago, recommenced working in 1851. The adventurers in this company received a dividend before they paid a call. The total sum paid per share is £3 10s., and the dividends £15 per share. Profits are likely to continue for years, the prospects being good and the reserves considerable.

### NORTH WHEAL METAL,

in Breage, Cornwall, in 5,000 shares. *Purser* and *Manager*, Mr. Chas. Carkeek, Camborne. *Mineral Owner*, C. W. Popham, Esq. Depth of mine under adit, 30 fathoms; adit, 12 fathoms.

No returns in 1864.

This mine is the eastern part of an old mine called "Wheal Wallis," which was worked 25 years ago by the late Mr. F. Bottrale and party; the other (the western) part of Wheal Wallis is gone into Penhale Wheal Vor sett. This mine would probably pay for a spirited development. There is another mine of the same name, in the same locality, but in the adjoining parish, Sithney. Duplicate names are very inconvenient in mining. Rock, clay-slate.

### WHEAL BEAUCHAMP,

in Gwennap, Cornwall, eastern side of Wheal Buller, has been abandoned about 40 years. In granite and clay-slate.

## . WHEAL PROSPIDNICK.

in Sithney, Cornwall. Idle. Granite and slate.

## GRYLLS WHEAL FLORENCE,

in the parish of Perranuthnoe, Cornwall. Number of shares, 4,000. *Purser* or *Secretary*, Mr. Wm. Watson, Plymouth. *Manager*, Captain Edw. Rogers, Perranuthnoe, near Marazion. *Landowner*, W. J. Trevelyan, Esq. Dues, 1-18th. Adit, 40 fathoms deep. Depth of mine below adit, 20 fathoms. Pumping and stamping-engine, 30-inch cylinder. Works commenced in 1864. No returns.

## GARLIDNA UNITED,

in Wendron, Cornwall, in 4,096 shares. Mr. J. G. Plomer, Helston, is the *Purser*. Captain James Rowe, Camborne, *Manager*. Duke of Cornwall, *Mineral Owner*. Dues, 1-18th. The rock is granite. Adit, 4 fathoms deep, depth of mine under adit, 24 fathoms. 35 men, 8 females, and 10 boys employed. Pumping-engine, 65 inches; Stamping-engine, 30 inches.

## MINERAL SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.		£	s.	d.
Black tin	5	5	0	1	... realising ...	241	10	2

The mineral workings in several parts of Wendron are very ancient—particularly in and near this mine. The most recent workings here, before the present Company took it, were begun by a Company formed by the late Captain William Brenton, in or about the year 1840; at which time Ruby Mine was united with it. The present Company commenced in March, 1860; since which about £29,000 has been expended, of which £3,000 was expended in 1864. The returns are small as compared with the expense.

## CARBONA,

in Crowan, Cornwall, has been idle about 5 years. It was worked a few years by Messrs. Vawdrey & Co. Mr. Vawdrey (Hayle) was the *Purser*. The returns met about two-thirds of the current cost. The mine is situate about 1 mile S.E. of "Crenver and Wheal Abraham," in granite and killas.

## WHEAL VRAWS,

a little mine, almost forgotten, situated in Sithney, Cornwall, near

an old rock, well known to antiquarians, called "Men-am-bar," near the top of Prospidnick Hill. There was a small engine erected, but it worked only a short time; no effectual trial made. I think North Prospidnick Mine now includes this ground. Rock, granite.

### NORTH PROSPIDNICK,

in Sithney, is idle. It is in the land of Sir Saml. Thomas Spry. Rocks, granite and slate.

### EAST WHEAL LEISURE,

in Perranzabuloe, Cornwall, has long been idle—in clay-slate.

### WEST WHEAL JANE,

in Kea, Cornwall, in 9,017 shares. *Purser*, Mr. Henry Jennings, Truro. *Manager*, Captain Wm. Teague, Tincroft mine. *Landowner*, Lord Falmouth. Dues, 1-18th. 75 men, 15 females, and 40 boys employed. Depth of adit, 60 fathoms; depth under, 40 fathoms. At work in the mine, pumping-engine, 60-inch; stamping-engine, 20-inch; winding-engine, 22-inch. Rock, clay-slate, crossed by 2 elvan courses. Works commenced about 200 or 300 years ago, and have continued, without intermission, ever since—a circumstance, I believe, without parallel in Cornwall. There has been a considerable outlay by the present Company; but, at the present time, the returns nearly cover the current expenditure. It is to be hoped that, by-and-by, they will do better.

### WHEAL UNY,

in the parish of Redruth, Cornwall, in 4,096 shares. Mr. E. King, of 22A Austinfriars, is *Secretary*. Messrs. R. H. Pike & Son, Camborne, are *Pursers*. Captain Jno. Daw, Redruth, is *Manager*. The rocks are granite and clay-slate. 234 men, 121 females, and 63 boys (total 418) employed. *Landowner*, Rev. J. W. Hawkesley (rector), and the Ecclesiastical Commissioners. Dues, 1-18th. Depth of adit, 27 fathoms. Depth under adit, 120 fathoms. Workings commenced by present Company in 1851. The water is pumped out by a 50-inch engine; the tin is stamped by a 36-inch engine, lifting 88 heads, and a water wheel lifting 4 heads; there are 2 winding engines of 24 and 26-inches respectively. The returns of minerals in 1864 were as follows:—

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	291	15	0	0	...	sold for	...	1,620	3 7
Black tin	241	8	2	1	...	"	...	14,606	0 9
								<hr/> £16,226	<hr/> 4 4 <hr/>

The returns will scarcely meet the expenditure, but hopes are entertained that now the American war has terminated, an advance on the price of tin will give a balance in favour of the Company.

### WHEAL VLOW,

in the parish of Perranzabuloe, Cornwall, in 4,450 shares. Mr. Rd. Cowling, Roseinvale, near Scorrier, is the *Purser*. Captain Jno. Tonkin, of Pool, is the *Manager*. The rock is clay-slate, impregnated with oxide of iron. There is a granite range underneath, but not yet reached. 43 men, 9 females, and 12 boys (total 64) employed. The dues (1-20) belong to the Marquis of Chandos; the soil belongs to the Dean and Chapter of Exeter. The adit is 35 fathoms deep. Depth under adit, 20 fathoms, and the works deepen daily. Present Company commenced in 1858, but the land had been worked over adit before the year 1750. Outlay about £6,500, of which £900 was expended in 1864 for engine, and 16 headed stamps. The engine is 24-inch.

#### RETURNS IN 1864.

Black tin ... 30 tons 2 cwt. 3 qrs. 9 lbs. ... sold for ... £1,512 3s. 0d.

The state and prospects of this mine are very good, and profits will soon be made.

### WHEAL CHANCE

(Gwennap), idle. Scorrier Railway Station stands on this mine. It was worked last by Messrs. Williams, who stopped it in the year 1828.

### WHEAL NEPTUNE,

Perranuthnoe, Cornwall. Once a very rich mine; idle many years. A new Company, partly formed, commenced operations about 3 years ago, but failed, for want of capital, to go on with the works underground.

### WHEAL GORLAND,

now part of St. Day, United; idle.

## WHEAL SPINSTER,

now called (or being a part of) Wheal Damsel.

## WHEAL TOWAN,

St. Agnes, Cornwall. First working. Gave large profits to R. A. Daniell and Co.

## WHEAL CLOWANCE,

in Crowan; idle many years. The ores were chiefly raised from "Clowance Caunter."

## WHEAL JEWELL,

in Gwennap, was cut rich about the year 1829, and gave Messrs. Williams and Co. about £250,000 profit. Many years before that a former Company gained about the same amount from another part of the site, called Wheal Quick, in St. Day village.

## WHEAL TREASURE,

in Perranzabuloe. Lead Mine; idle,  $\frac{1}{2}$  of a mile north of Mithian Church.

## WEST WHEAL VIRGIN, WHEAL VIRGIN, EAST VIRGIN,

parts of Clifford Amalgamated.

## WHEAL OCEAN,

in St. Agnes, Cornwall; idle many years. It stands at the eastern side of Trevellas Porth. An engine was erected on the cliff by the late Captain Gripe, but it worked only a short time, for tin.

## WHEAL PENROSE

(Sithney), near Porthleven, formerly a rich lead mine; now idle. Land of J. J. Rogers, Esq., intended to be re-worked by Mr. J. Hunt and Co.

## WHEAL PROSPER

(Perranzabuloe), idle.

## WHEAL PRUDENCE,

"limited" in St. Agnes. Messrs. Thomas formed a Company, but, after engines and other erections were set in order, and a few months' working, all the paid up capital became exhausted. Materials mortgaged. Mine now being wound up in the Stannary Court.

## WHEAL RAMOTH

(Perranzabuloe), idle nearly 30 years. No particulars known as to quality of the lodes.

## WHEAL REEN

(Perranzabuloe), a small mine; poor, and idle 20 years.

## WHEAL ROSE

(Sithney, Cornwall), now worked above adit by Mr. Hunt, who is forming a Company for its effectual development. It was rich in lead ores many years ago, and no doubt will be so again.

## GREAT EAST LOVELL,

in the parish of Wendron, Cornwall, in 3,000 shares. *Purser*, Mr. Henry Rogers, Helston. *Manager*, Captain John Burgan, Helston. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of mine, 3 fathoms. No adit. 10 men employed. Rock, granite. Pumping-engine, nearly ready, 50-inch. The workings commenced in 1864, in land in which previously little or nothing had been done. It is said that East Lovell lodes intersect this sett, and that circumstance has imparted a value to the mine, which, otherwise, it would not have. Exploration alone can prove the real value of the lodes.

## CRENVER AND WHEAL ABRAHAM, LIMITED,

in the parish of Crowan, Cornwall, in 30,000 shares. Since the present Company commenced operations about a year ago, the contractor for the machinery, &c., has prosecuted his undertaking with uncommon energy. Three powerful pumping-engines, of 90, 80, and 70-inches, respectively, are nearly complete, two of them quite so; and the water is being drained rapidly by the two already at work. There are also several winding and other engines, nearly ready for their various works. I never knew works constructed with such rapidity before, and I understand the whole

are done in the most substantial and satisfactory manner, reflecting credit on all concerned.

It is well known that these mines, under the old Company, which dissolved in 1825, yielded immense returns of copper ore, and that a large sum was divided between the shareholders. It is also stated on good authority, that tin, which at that time was little noticed by the Company, was stowed away in large quantities amongst the *débris* under ground, and that the same, on being stamped, as it now will be, and made marketable, would yield large returns. In proof that tin was thrown away, I can state that about £40,000 worth has been sold from the burrows since the old workings ceased.

It is also asserted that the old Company had so much copper in their main lode, as to make them totally indifferent as to any further discovery; so they never searched after any other lodes by cross-cutting the ground north and southward, as the present Company intend to do, to intersect parallel lodes, which are known to be in the sett.

Although the mine is 230 fathoms deep (and in 1825 that was considered very deep), it is not so deep by about 100 fathoms as some other mines in the county. The hopes of success in the present working appear to be founded on the following grounds; 1. Fresh discoveries in the bottom by further sinking on the main lode. 2. From the prosecution of parallel lodes. 3. From the returns of tin above mentioned. How far these hopes may be realised, time alone can show; but to a company of so daring a character, who can but wish success? The *Lords* are Rev. H. M. St. Aubyn and others. *Manager*, Captain John Vivian. *Purser*, Mr. W. P. Cardozo, Camborne.

### BINNER DOWNS,

lies immediately westward of, and has the same lodes as those of Crenver and Wheal Abraham. It yielded large returns of copper-ore for many years. It ceased to work, I believe, soon after those mines. £8,000 worth of tin has been returned from the burrows since the abandonment of the mine. It is said that a new Company has been formed for re-working it.

### SOUTH WHEAL CROFTY,

in the parish of Illogan, Cornwall, in 937 shares. Was severed from North Crofty a few years ago, and subsequently, the western part of the sett has been sold, and is now being worked under the old name of Wheal Crofty. These three mines, together with East Seton, constituted the late "East Wheal



Crofty," which gave large dividends. Of South Wheal Crofty, the *Purser* is Mr. E. H. Rodd, of Penzance; and the *Manager* is Captain William Rutter, of Camborne. 120 men, 18 females, and 16 boys employed, total 154. The *Lords* are J. F. Basset, Esq., Mr. Tyringham, and another. Dues, 1-18th. Depth of adit, 32 fathoms. Depth under adit, 140 fathoms. Workings commenced in 1834, on which there has been a profit, but in 1864 a loss was sustained. The mine is drained by a 60-inch engine, and the ores and *débris* drawn to surface by a 24-inch winding-engine. There is one water stamping mill lifting four heads. The position of this mine is such as to warrant results better than those of last year, and the prospects presented are highly favourable.

### GREAT SOUTH CHIVERTON,

in the parish of Perranzabuloe, Cornwall. *Secretary*, Mr. Henry Chapman, 11 Royal Exchange. *Manager*, Captain John Rancarrow, St. Ives. *Landowners*, Messrs. Joseph Reynolds, Ley, Peter, & Geach. Dues, 1-16th. Depth of mine, 10 fathoms (adit level). 12 men and 8 boys employed. A 50-inch pumping-engine nearly completed. The works commenced about March, 1864; since then they have been conducted with that activity for which the manager is distinguished. Great hopes are entertained that the mine will prove a valuable one, having several very promising lead lodes. The mine adjoins West Chiverton, which is too well known to require a remark from me.

### WORVAS DOWNS,

in Lelant, Cornwall, has ceased to work, and the "winding up" is being prosecuted in the Stannary Court, Truro.

### BOSWORTHEN,

tin mine, in Sancreed, Cornwall; idle.

### SOUTH KITTY,

in Lelant; little done; idle. A tin mine in Laity estate.

### BALNOON,

in Lelant, stopped a few years ago. Worvas Downs, a part of this old mine.

## PRAED CONSOLS,

previously called Wheal Cherry, in Lelant, after the erection of machinery, soon went down for want of capital.

## CARRACK DEWS,

St. Ives; has been idle 2 or 3 years.

## TYRINGHAM CONSOLS,

in Towednack, Cornwall. Set to work by Captain Thomas Richards & Co., but not effectually tried; idle.

## WEST MARGARET,

in Towednack, Cornwall, has been idle about 3 or 4 years. Same lode as Wheal Margaret, in Lelant. *Landowner*, Hon. Mrs. Gilbert.

## CHARLOTTE UNITED.

in Perranuthnoe, Cornwall, in the land of Messrs. Trevelyan and others, and lately managed by Captain Peter Floyd, has ceased to be worked.

## CARLEEN WHEAL VOR,

in Breage, Cornwall, is in the land of Charles Trelawney, Esq., and was formerly a part of Great Wheal Vor sett, and then called "Carleen Mine." There are no operations carried on here by the present Company. A tin mine in granite.

## GREAT WHEAL FORTUNE,

in the parish of Breage, Cornwall, in 1,798 shares, re-commenced working 1851. The *Purser* is Mr. T. W. Robinson, Penzance. *Manager*, Captain Joseph Vivian; Breage, Helston. Rock, clay-slate. Number of persons employed, 457; viz., 257 men, 120 females, and 80 boys. *Lords*, Chas. Trelawney and E. Beauchamp Tucker, Esqs., and Rev. H. Ford. Dues to Trelawney, 1-18th, and to the others, 1-20th. Depth to adit, 25 fathoms, depth under, 95 fathoms perpendicular; but 122 fathoms on Carnmeal lode. Original outlay, £32,900. Divided £10,338. Lost since £5,933. Pumping engines, 70 and 40 inches respectively. Stamping engine, 36 inches. Two winding engines, 24 and 20 inches. Four water wheels lifting 32 stamp heads are also at work.

## RETURNS IN 1864 :

	Tons	cwts.	qrs.	lbs.			£	s.	d.
Copper ore	18	20	1	0	...	sold for	...	162	12 6
Black tin	293	13	1	9	...	„	...	20,193	13 5
Arsenic	70	0	0	0	...	„	...	35	0 0
							<hr/>		
							£20,391	5	11

This mine lies south of, and adjoins the celebrated Wheal Metal (Great Wheal Vor) Mine. There has been a temporary falling off in the returns, but it is believed that ere long the circumstances of the mine will be so altered for the better, as to enable the purser to resume dividends. Although these mines have taken a long time to establish, yet there can be little doubt but that they will eventuate in a great and paying property. The depth of the mines in comparison with that of Great Wheal Vor is trifling, and the bases of the lodes under the present workings, will probably be found to be fraught with metal in quantities equal to those of Great Metal Mines. The districts are identical, and similar results may justly be looked for.

## PELLOR WHEAL METAL,

in the parish of Breage, Cornwall, stands between Great Wheal Fortune and West Vor at the east, and Great Wheal Metal at the west, and it has the Wheal Metal lode, Metal South lode, and Carneal lode, running through it. It is "virgin" land, as miners call land never mined, and is evidently a very desirable sett, all the mines adjacent being productive.

## CLOWANCE WOOD,

in the parish of Crowan, Cornwall, re-commenced working in September, 1864. *Purser*, Mr. W. P. Cardozo, Camborne. *Manager*, Captain Edward Chegwin, Camborne. Rock, clay-slate. 19 men and 1 boy employed. Rev. Henden Molesworth St. Aubyn, is the Lord. Dues, 1-20th. Depth of mine to adit, 22 fathoms. Depth under adit, 18 fathoms. Pumping-engine 60-inch cylinder. No returns in 1864.

Specimen Report, April 1, E. Chegwin. "In the engine-shaft sinking below the adit the ground is not quite so favourable, as we have a floor of spar in the bottom of the shaft, but we expect to get through it in a few days." Whatever that may mean! There is nothing said about the size of the lode or lodes, whether they contain any metal, the nature of the spar, or of the

country. Surely some better information than this ought to pervade the practical reports of the *Mining Journal*.

### WEST SETON,

in the parish of Camborne, Cornwall. Commenced working about the year 1844. In 400 shares. *Pursers*, Messrs. B. Matthews and Son, St. Day. *Manager*, Captain Charles Thomas, Dolcoath. Rock, clay-slate, traversed by elvan course. *Lord*, John F. Basset, Esq. Dues, 1-15th. Depth of adit, 22 fathoms. Depth under adit, 150 fathoms. Pumping-engine, 85-inch. Winding-engine, 24-inch. Crushing-engine, 24-inch. The outlay per share was £47 10s., received in dividends £425 per share. Market value, about £190 per share.

This mine was selected by Captain John Lean, a member of a great Cornish mining family, upon purely technical grounds, or upon that instinct which enables the Cornish miner to decide what is promising and what is not promising ground for ore. Although the thought is often ridiculed as a chimera, it has here, as in the majority of instances where it has been fairly tried, proved to be correct. We have known instances, when geological lore was not so forward as it now is, where a Cornish agent from his own instinct, knowledge, sagacity, or whatever it may be called, has selected 16 profitable mines, beginning with several of them at the very grass. Notwithstanding this, we still hear the "where it is, there it is," principle advocated, and the great laws of the arrangement of metals delegated to chance, or entirely ignored. Let us learn better; West Wheal Seton was selected upon geological evidence alone; it has been working about 20 years and paying 40 per cent. to the shareholders during the whole of that period. Let those who deride mining, and denounce miners, merely because their money is made to play ducks and drakes by a few unprincipled brokers, point out to us any other mercantile undertaking that can show an equally prosperous result for an equally long period, and if they can let the contrast between the advantages of the two be a fair one, it is quite clear that the prominent features of the best nature of mining still remains to be brought before the public.

### WHEAL SETON,

in the parish of Camborne, Cornwall. In 396 shares. *Purser*, Mr. J. H. Tilly, Falmouth. *Manager*, Captain Robert Williams, Wheal Seton. Rock, clay-slate. Persons employed, 480, viz., men, 220, boys and girls, 260. *Lords*, Miles Charles Seton, Esq., and Mrs. Pendarves. Dues, 1-15th. Depth of adit, 24 fathoms.

Depth under adit, 160 fathoms. Profit in the year 1864, £9,504. Pump-engine, 70-inch. Stamping-engine, 24-inch. Winding and crushing-engine, 22 inch. One water-wheel stamping tin.

#### RETURNS IN 1864.

	Tons	cwts.	qrs.			£	s.	d.
Copper ore ...	5,003	0	0	sold for ...		24,197	3	2
Black tin ... ..	50	18	1	„ „ ...		2,977	7	9
Mundic, or arsenic	130	0	0	„ „ ...		130	0	0
						<hr/> £27,304 10 11 <hr/>		

Wheal Seton is too well known to require any remark from me, except that I am very much gratified that the adventurers have been so fortunate, and are likely to continue so.

The mine is situated in the Camborne district, in just such a position as would have been selected had the miner the power of arranging the strata to his own satisfaction. To the S.E. lies the great granite out-burst of Carn Brea; the range with its accompanying elvan dikes, running down to the westward in parallelism with the great copper lodes of the country, those great copper lodes which have held such a store of copper, that no man who has ever trusted them faithfully, and worked them fairly, has ever been disappointed; the capital employed for bringing Wheal Seton into profits, was £24,000, the dividends accruing to the shareholders have been about £80,000, and during last year the profits were £9,504 against the original outlay of £24,000, or nearly 40 per cent. per annum. It is true that the selling price is now four times the amount of the paid up capital, reducing the security to 10 per cent. to those now investing; but this is a guarantee of the high value of the stock, and it points to the wisdom of going into mining early.

#### GOSHEN.

in Perranzabuloe. *Landowner*, Sir R. R. Vivian, Bart. Idle. A lead mine in clay-slate.

#### WEST LOVELL,

in Wendron, Cornwall, has been idle 3 years. The late Mr. James Clarke, of Helston (who was accidentally killed by his horse throwing him off on the road), was the *Purser*.

#### WHEAL SQUIRE,

Gwennap, idle; new held by Clifford Amalgamated Company.

About 40 or 50 years ago, this mine was very rich for a short time.

### WHEAL SQUIRE,

St. Erith, idle. Captain T. Richards worked it a few years ago.

### WHEAL CAROLINE,

Perranuthnoe, once rich for copper, now idle.

### CRANE,

in Camborne, Cornwall, recommenced working in August, 1860. Messrs. B. Matthews & Son, St. Day, *Pursers*. *Manager*, Captain Henry Skewis, Camborne. Rocks, clay-slate, greenstone, and elvan. 48 men and 2 boys employed. *Land-owners*, J. F. Basset, and T. J. A. Robartes, Esqrs. Dues, 1-18th. Depth of adit, 20 fathoms; depth under adit, 90 fathoms. A 72-inch pumping-engine, and a 24-inch winding-engine at work. It is divided into 861 shares, on which £26 17s. per share have been paid by the present Company. It was worked for a few years by a Company broken up in 1853, but little except the erection of expensive buildings was done. £5,120 worth of ore was returned. The buildings were bought by the then manager, and sold to present Company for £500. The position of this mine seems to justify a confident hope of better results than those already realised. The management is good, and time and money only are required to place the mine in a paying condition.

### TREBARVAH,

in Perranuthnoe, Cornwall. A copper mine. Idle; not from poverty, but from some disagreement between the lessor and lessee.

### GERNICK

mine, in Crowan (tin and copper), was first slightly tried many years ago; and, lastly, a Company was formed by Mr. Harvey, solicitor; but after the erection of a pumping-engine, and a very small expenditure under ground, the mine was abandoned. A specimen of the folly of undertaking a work for which no proper pecuniary provision was made for effecting it.

### CARZISE,

in Crowan, has been idle many years.

## EAST WHEAL DAMSEL,

copper mine, in Gwennap, was worked many years by Messrs. Williams & Co., but it was not, I believe, very valuable. I think the returns about met the cost. It stopped about 25 or 30 years ago. Captain Thos. Kitto (who was agent under that Company about 60 or 70 years) was the *Manager*.

## WHEAL HARMONY,

Redruth. Idle. This was a rich mine, and deserves further prosecution.

## WHEAL HENDER,

in Crowan. Idle. It lies east of Rosewarne United, in Gwinear. It was first called "Copper Bottom," about 20 years ago.

## TREVOOLE,

in Crowan, disappointed the expectation of its adventurers. It has been worked two or three times.

## WEST VIRGIN,

in Tolcarne, Gwennap. A little mine, set to work by Mr. Francis Pryor; little was done in it.

## TRUMPET CONSOLS,

Wendron, near Helston. *Purser*, Mr. Henry Rogers, Helston. *Manager*, Captain Rd. Quentrall, Wendron. The rock is granite. 154 men, 35 females, and 69 boys (total, 258 persons) employed. Duke of Cornwall and John M. Williams, Esq., *Lords*. *Duchy* dues, 1-20th, reduced during pleasure to 1-40th. Mr. Williams' dues given up during pleasure. Depth of mine to adit, 10 fathoms; under, 140. Calls made, £11,500. Dividends paid, £11,000. Draught-engines, 48 and 40-inch. 2 winding-engines, of 18-inch each. 5 water-wheels stamping tin.

## BLACK TIN SOLD IN 1864.

114 tons 18 cwt. 0 qrs. 11 lbs. ... for ... £7,830 2s. 3d.

This mine is in a good tin district, and the returns are likely to leave a profit to the Company in future.

## MELLANEAR,

in the parish of St. Erth, Cornwall, in 2,500 shares. Commenced in 1864. *Purser*, Mr. Almond E. Paull, Camborne. *Manager*, Captain William Paul, Pool, Illogan. The rock is clay-slate. 51 men, 8 females, and 4 boys employed. *Lords*, Francis Rodd, Esq., and others. Dues 1-24th. Depth of adit, 12 fathoms; under adit, 50 fathoms. Pumping-engine 76-inch. For winding, crushing ores, and for capstan, 17-inch engine.

No returns.

This mine is the western portion of West Alfred Consols, the other portion of which was abandoned about 2 years ago. The present working is by another Company. The prospects are good. This old mine was slightly worked about 40 or 50 years ago.

## TRELEIGH CONSOLS (LATE NEW TRELEIGH),

in the parish of Redruth, Cornwall, in 1,869 shares, is situated in the clay-slate formation on the northern side of the Carnmarth Granite range. *Secretary*, Mr. W. Nicholson, London. *Manager and Purser*, Mr. F. Pryor, Redruth. 50 men, 6 females, and 4 boys, employed in and on the mine. *Lords*, Messrs. Chadwick, Gardiner, & Michell. Dues 1-18th. Adit 7 fathoms; depth under, 80 fathoms. There has been a loss on the working, which commenced probably 30 years ago, but the "ancients" worked there before then. This mine is well conducted, and hopes are entertained that the trials now being made will materially alter the state of the Company's balance sheet.

## SOUTH ROSEWARNE,

in the parish of Gwinear, Cornwall, in 3,000 shares. Mr. W. H. Paull Camborne, *Purser*. *Landowner*, H. Willyams, Esq.; dues 1-18th. Depth of adit 5 fathoms; depth under it 30 fathoms. Rocks, clay-slate and elvan. The present party commenced in 1863, but no effectual trial can be made without the aid of a steam pumping-engine, which it is intended to erect so soon as the shares are subscribed for. Hitherto the expenses have been borne by an individual, who has expended about £600 in preliminary works. It is well known in the locality that during a former working about 30 years ago, large quantities of tin were sold from the mine. At the time they ceased the price of that metal was very low (about £38 per ton). At its present price, a profit may be made by resuming operations on the points left by the old workers.



## NORTH TRESKERBY,

in the parish of St. Agnes, Cornwall, was set to work in the year 1859. The number of shares is 5,936. Messrs. B. Matthews & Son, St. Day, *Pursers*. Captain Rd. Pryor, Redruth, *Manager*. Rocks, clay-slate and elvan. *Lords*, Messrs. Williams, Ley, Geach and others; dues 1-18th. Depth at adit 45 fathoms; under adit 110 fathoms. The outlay has been 29*s.* per share, and the dividends subsequently 13*s.* per share, but last year, on the whole, there was no profit. Steam pumping-engine 56 inch. Winding and crushing engine 18 inch.

SOLD IN 1864.									
	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	1,977	12	0	0	...	for	9,337	3	1
Tin stuff	1,316	8	2	0	...	,,	1,050	3	7
							<hr/> £10,387 6 8 <hr/>		

The position of this mine is first rate, and as the prospects are good, the Company may calculate on a resumption of dividends at no distant date.

## WHEAL SPARNON

in the parish of Redruth, Cornwall, in 6,000 shares. *Secretary*, Mr. G. H. Cardozo, London. *Purser*, Mr. W. P. Cardozo, Camborne. *Manager*, Captain Wm. Tregay, Redruth. Rocks, granite and clay-slate. 60 men employed in the mine, operations on the surface of which commenced in 1864. *Landowner*, Lord Clinton. Dues, 1-20th. Depth of adit, 18 fathoms; depth under adit, 60 fathoms. A 70-inch pumping-engine just completed, also a 22-inch winding-engine. Little has been as yet done by the present Company under the surface; but it is generally believed that enormous quantities of tin will be raised after the mine has been cleared of water.

## WEST WHEAL VOR,

(in 4,096 shares) in the parish of Breage, Cornwall, comprises what was formerly called Wheal Emma and a portion of the old Wheal Vor sett lying west of the great cross-course. It adjoins Great Wheal Vor and Great Wheal Fortune. Mr. J. H. Murchison, of 8 Austinfriars, is *Secretary*. Captain Joseph Southey, *Manager*. 20 men, 1 female, and 4 boys employed. *Landowners*, John Jope Rogers, and Charles Trelawney, Esqrs.

Dues, 1-18th. Depth of adit 14½ fathoms; under adit 22 fathoms. Commenced working March, 1864. About £6,000 expended; no returns. A 50-inch engine pumps the water. The prospects are good, and dividends may be calculated upon soon after the mine has been sufficiently opened. The twelvemonth already devoted to the works is insufficient to make a fair trial of even one of the several lodes running from Wheal Metal through this sett.

### WHEAL EMILY HENRIETTA,

in Illogan, Cornwall, in 1,024 shares, in clay-slate, land of John Francis Basset, Esq. Dues 1-15th. *Purser*, Mr. John F. Penrose, Redruth. *Manager*, Captain John Daw of Carnbrea mines. 14 men employed. Depth now being worked is 15 fathoms from surface. One 50-inch engine draws the water. There is also an 18-inch winding engine. No returns in 1864. The position of this mine, in the rich group of the Setons, &c., is sufficient to stimulate the adventurers to a further promotion of the works, which up to this present date have been on a limited scale. The sett lies N.E. of, and adjoins Wheal Seton.

### WEST GREAT WORK,

in the parish of Breage, Cornwall, in 3,500 shares, commenced working in 1862. *Purser*, Mr. Almond E. Paull, Camborne. *Manager*, Captain Samuel J. Reed, Crowan. Rock, clay-slate, with granite at the eastern boundary. 95 men, 12 females, and 12 boys employed. *Landowner*, Duke of Leeds. Dues 1-20th. Depth of adit 22 fathoms. Depth under adit 26 fathoms. Pumping-engine, 40-inch. A water stamp in use. The Company having secured a stamping-mill, are now stamping their tin-stuff (instead of selling it to what are called "bargain buyers") thereby making the most of their produce. Their engine has been at work only 9 months, and yet their present returns are about 5 tons of tin per month; so that their prospects may be regarded as very good. The district is a capital one for tin, and their tin is of the best quality.

### EAST WHEAL ELLEN,

in the parish of St. Agnes, Cornwall, in 1,300 shares. Begun in 1856, by Mr. Greenwood and others; but little has been done for want of an engine to pursue the lode under the adit. They never will realise any benefit from their present cramped operations. The manager is one of the best of miners. *Secretary*, Mr. W.

Thomson, 2 Copthall Buildings, London. *Local Purser*, Mr. J. Corfield, St. Day. *Manager*, Captain R. Pryor, Redruth. Rock, clay-slate. 8 men employed. The *Lord* is Humphrey Will-yams, Esq. Dues, 1-15th. Depth of adit, 60 fathoms; under *nil*.

#### RETURNS IN 1864.

		Tons.	cwt.				£	s.	d.
Copper ore	...	181	15	...	for	...	771	3	11
Blende "	...	25	0	...	"	...	25	0	0
							£796	3	11

#### PERRAN WHEAL MARIA,

in Perranzabuloe, Cornwall, in 3,000 shares. *Manager and Purser*, Captain J. Middleton, Shepherd House, near Ladock. *Agent*, Captain John Evans, St. Agnes. Rock, clay-slate. 2 men and 1 boy employed. *Mineral Lord*, Duke of Cornwall. Dues, 1-18th after erection of an engine. Depth of mine to adit, 24 fathoms. Depth under adit, 20 fathoms. Commencement of working, March, 1864. No machinery, and no returns. This property has been well reported by several respectable agents.

#### PEDNANDREA UNITED MINES.

in the parish of Redruth, Cornwall, in 8,465 shares. *Secretary*, Mr. G. H. Cardozo, London. *Purser*, Mr. W. P. Cardozo, Cam-borne. *Manager*, Captain Wm. Tregay, Redruth. Rocks, granite and clay-slate. 250 men, 55 females, and 110 boys (total 415) employed. *Lords*, Lord Clinton, Mr. Martin, Mrs. Pendarves, and Mr. Robartes. Dues, 1-20th. Depth of adit, 25 fathoms; depth under adit, 130 fathoms. Workings commenced in 1854. Pumping-engine, 70-inch; stamping-engine, 32-inch, winding-engine, 22½.

#### SALES IN THE YEAR 1864 :

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	23	6	0	0	...	sold for	...	146	14 0
Black tin	211	10	2	24	...	"	...	13,130	0 11
Mundic	124	0	0	0	...	"	...	91	10 0
							£13,368	4	11

This mine is self-supporting when tin is at a high price. The manager is well up to his business: if any man by judicious device can make the mine pay, he can.

## NEW TREVENEN,

in the Parish of Wendron, Cornwall, in 960 shares, commenced by present Company in 1861. Lands of John Rule and Wm. Michell, Esqrs., and others. Dues, 1-20th. Depth to adit 10 fathoms. Depth under adit, 40 fathoms. 12 men and 4 boys employed. Water pumped by a 24-inch, double acting, rotary engine. Mr. William Carne, of Falmouth, *Purser*. Captain James Evans, of Nance, near Redruth, *Manager*.

## BUDNICK CONSOLS,

in Perranzabuloe. Idle. This was a good mine many years ago, and, if properly worked, would probably be so again.

## WHEAL MARY,

Perranzabuloe. Idle. Little done.

## WHEAL LEISURE,

in Perranzabuloe, Cornwall. Idle 20 years. It was a rich mine at one time. It is not deep, and ought to be re-worked. It is situated at Perranporth.

## ROSEINVALE,

in Perranzabuloe. Lead mine. Idle.

## SOUTH TRESAVEAN,

in Perranarworthal, Cornwall. Idle. A water-wheel erected for drawing the water, but it worked only a short time.

## PERRAN WHEAL VIRGIN,

in Callestock, in Perranzabuloe. Idle 14 or 16 years. Made lead shallow, but it went out entirely about 20 fathoms from surface. The shares went high, and then suddenly fell to zero.

## ST. AUBYN &amp; GRYLLS,

in Breage, Cornwall. Little or nothing doing.

## SOUTH GARRAS,

in Kenwyn. Lead mine. Idle. It yielded much mineral a few years since.

**POLLADRAS,**

in Breage, formerly a part of the Great Wheal Vor Consols, has been silent about 20 years. A re-working would pay well.

**WHEAL ANNA (LATE WHEAL FRIENDSHIP),**

in St. Hilary, Cornwall, is idle. Poverty, of course, led to the event of abandonment. Messrs. Taylor & Sons worked it many years, at a loss; then they sold it to another party.

**WEST ALFRED,**

in St. Erth, Cornwall. Has been idle about 5 years. A mine near Hayle River, apparently supplied abundant water to the engine-shaft, for the water pumped out was enormous.

**PENHALE,**

in Breage, tin mine. Idle. This was a part of Great Wheal Vor sett, 30 years ago, when that Company held 1,400 acres of ground, and worked 6 or 8 mines simultaneously therein.

**PENHALE MOOR,**

tin mine in St. Enoder. Idle.

**SWANPOOL,**

Budock, near Falmouth, yielded of lead large quantities. It will doubtless be re-worked, as there are large reserves which would pay well.

**GILMAR**

tin and copper mine in the parish of St. Erth, was worked by Messrs. R. R. Michell & Company for a few years, at a loss of a few thousands. The sett is very small, but the productive lodes of West Providence run through the sett; but here they were neither poor or undeveloped.

**WEST TREVELYAN,**

in Perranuthnoe, Cornwall, ceased to work a few months ago. The returns of tin were considerable, but rarely equal to the expenditure.

## WEST PROVIDENCE,

in St. Erth, Cornwall, after yielding large returns of tin is now idle.

## WEST ALFRED CONSOLS,

Phillack, Cornwall. Idle a year or two. The western part of the sett, in St. Erth, called Mellanear, is worked by a new Company, with cheering prospects.

## WHEAL GUSKUS,

in St. Hilary, Cornwall. Idle. This lies east of and adjoins Wheal Anna.

## TREVELYAN,

in Perranuthnoe, Cornwall. Idle; but ought to be re-worked. A steam engine was erected by the late Company, but was little used. There was want of capital or spirit to carry on the works. Depth, about 100 fathoms.

## TYWARNHAILE,

St. Agnes, Cornwall. Idle. It has been tried several times by different companies, without success. The last Company stopped a few months ago, after a considerable loss. *Owner*, W. B. Tyringham, Esq.

## WHEAL LIBERTY,

in St. Agnes. Idle about 25 years.

## SOUTH ELLEN,

in St. Agnes. A copper mine. Idle about 4 years.

## NORTH HALLENBEAGLE,

in St. Agnes, Cornwall. Worked about 2 years, and stopped a few months ago.

## EAST WHEAL MUSIC,

in Duchy Land, in St. Agnes, was worked a short time by means of a small engine, and abandoned from poverty. Not sufficiently tested.

## SOUTH WHEAL KITTY,

in St. Agnes, south of Wheal Kitty. A sett taken up by Captain Rd. Pryor, Redruth. Little done in it.

## TREGULLOW CONSOLS,

in St. Agnes. Idle. Little done. Tin and copper mine.

## STENCOOSE AND MAWLA UNITED,

in St. Agnes. Worked a short time, and then died.

## PERRAN ST. GEORGE,

in Perranzabuloe, Cornwall. Idle. But an engine or two still remains there. This mine ought to work in conjunction with Wheal Leisure, and some other mines.

## PENHALE,

lead mine, in Perranzabuloe. Idle many years. It is said that a new grant has been made to work this and Wheal Golding, in same lord's land. These mines yielded immense quantities of lead.

## NORTH LEISURE,

in Perranzabuloe. Idle.

## WHEAL GOLDING,

in Perranzabuloe, Cornwall. Idle several years. Large quantities of lead have been raised by at least two companies successively. It has been said lately that a new grant of the land has been obtained.

## NORTH WHEAL SETON,

in Camborne, previously called Camborne Consols, lately worked by a party formed by Messrs. Thomas, has been abandoned, and is now being wound up in the Stannary Court. It lies northwest of South Seton, and deserves further trial.

## EAST ALFRED CONSOLS,

in the parish of Gwinear, after a trial of about 10 years, under the management of Captain Joseph Vivian, has been abandoned.

## ROSEWARNE AND HERLAND UNITED,

in Gwinear, made a great promise, and gave one dividend. Idle 3 or 4 years.

## PENHALDARVA,

lead mine in Kenwyn. Idle.

## NORTH ROSEWARNE,

in Gwinear; a very small sett and but little done in it, and now idle.

## CARDREW CONSOLS,

in Redruth. Has been idle many years. Was last worked by Messrs. Williams & Co. Copper mine.

## POLHIGEY MOOR,

tin. Wendron. Lately stopped.

## WHEAL ANNIE,

in Gwinear, very little done.

## WHEAL MARY,

Redruth. Idle. A copper mine.

## WEST TOWAN,

in Illogan, Cornwall, after a few years' trial by Messrs. Taylor & Co., now lies idle, and the mine buildings have been purchased by a Patent Powder Company, for the manufacture of that article for blasting purposes.

## WHEAL MAIDEN,

Gwennap, is in St. Day United. This was worked by Messrs. Williams as a distinct mine before Mr. F. Pryor purchased Pol-dice, Wheal Unity, and Wheal Gorland, and united the whole into one concern. The new Company worked Wheal Maiden at a sacrifice.

## CARHARRACK,

in Gwennap, has been idle many years. A copper mine.



## CALVADNACK,

in Wendron. Idle, after many years' working. A tin mine.

## CAMBORNE CONSOLS,

in Camborne, has been idle twelvemonths.

## TINGTANG.

See West Clifford, Gwennap.

## GREAT WHEAL VOR,

in 5,908 shares, situated in the parish of Breage, Cornwall. *Chairman and Managing Director*, George Noakes, Esq., 184, Gresham House. *Manager at the Mine*, Captain Thos. Julian. *Landowner*, Charles Trelawney, Esq. Dues, 1-18th. Depth of mine from surface, 184 fathoms. No. adit. Rock, clay-slate, near the granite range. Pumping-engines, one 85-inch, at work, and one 60-inch, idle. 26-inch whim, pumping water. 2 winding-engines, 1 24-inch, and the other 22-inch, with capstan attached.

Wheal Vor is a very old mine. The first steam engine ever erected in Cornwall, is said to have been erected there, in the year 1748. The late Mr. John Gundry, of Goldsithney, took the mine in or about the year 1813, who, in 1815, erected the first steam stamping mill that was put up in the county; to erect which, an engineer, called Godfrey, was sent down from Neath Abbey, in Wales, so unused were the Cornish engineers of that day to such work. In the year 1819, when the mine made profits, Mr. Gundry, being in difficulties from his other mining schemes, was declared a bankrupt, which ruined him and all his connexions. The late Mr. R. Tyacke took the management, which he held till his death in 1825. The returns of tin were enormous, varying from £8,000 to £11,000 per month, when the price was only about £40 per ton. A smelting house was on the mine. The mine worked on till 1844, when it stopped, the depth being about 300 fathoms, and the profit having been about £200,000, from the commencement. The mines comprised Wheal Vor, Wheal Vreah, Carleen, Polladras, Penhale, Poldown, Wheal Sithney, and other small mines which they did not work. It was supposed at the time that the mines would never work again, but in 1853, a Company was formed by the Messrs Crease, of London, with a nominal capital of £200,000, to re-work them. After a long time, and amidst great difficulties, the water was drained off the bottom, when the lode was found to be hard and poor. In a little time afterwards it was determined to stop the old mine (Wheal Vor)





and confine attention to Wheal Metal (Poldown) which had been rich for years, and but for which the old mine would have stopped before. By the working, up to that date, they found that the total expenditure had been £400,000; minus tin sold, £150,000, leaving a sum expended by the shareholders of £250,000!

It must be admitted that it was one of those great undertakings calculated to inspire the mind with admiration at the range and audacity of the human intellect. There was a cutting into the crust of the earth, some of which had cost a guinea an inch to excavate, carried down to a depth of 600 yards below the level of the sea, all inundated with water. A capital of £200,000 was formed for the purpose of draining and repeopling this immense work. This was found to be insufficient, and £50,000 in addition had to be raised, and at the close of the expenditure of a quarter of a million sterling, it was found that enough of the bodies of the great metallic deposits remained in the lodes in that part of the property called Wheal Metal, to reimburse or rather to pay good interest for this great outlay. Unfortunately the price of tin has fallen so greatly, it has considerably reduced the income of the Company. They have, however, established a greater mine and a greater fact, that is to say, that £250,000 may be beneficially laid out in simply opening up an old mine beset with all the difficulties it is possible to imagine.

Wheal Metal Mine has been at work about twelve years, and in that period it has returned tin to the value of £202,481. The finances of the Company continue in a sound condition, and at the meeting in March last, the balance of assets over liabilities was £6,498 7s. 7d., out of which they paid a dividend of £4,431, carrying forward £2,067 to the next meeting in June, when there will be another dividend declared. The cost is about £2,000 a month. The number of persons employed throughout the mine is 540, out of which there are 183 men employed on tutwork. The engine at Ivey Shaft is 85-inch, and the depth of shaft is 184 fathoms. Stamping-mill at Wheal Vor, 36-inch, lifting 60 heads, and employing 31 men, 55 boys, and 146 girls.

During the past year it has yielded 690 tons of black tin, which realised £42,884, and has divided amongst the shareholders £16,099 6s., or equal to 54s. 6d. per share.

Ivey Shaft is interspersed with several branches dipping from the north; the character of the ground is of a very promising nature, worth about £50 per fathom. The 162 West, lode, well defined, worth £40 per fathom. An improvement expected as they proceed west against the slide. The 157 West is worth £25 per fathom; 157 East, worth £25 per fathom. The 147 East, is fallen off as expected, as it nears the slide east;

not so well defined, but more mixed with branches, now worth about £35 per fathom.

Metal Engine Shaft is sunk to the 194, and about 2 fathoms south of the lode, where they have a fine branch of tin, which gives great expectations for finding a good lode north. The 184 East, is worth £40 per fathom. The 184 West, is worth £120 per fathom. The 174 West, is worth £90 per fathom. The 174 East, is worth £35 per fathom. The winze sinking below the 164 to hole to the 174 a few fathoms east of present 174 end, is worth £110 per fathom. They have about 8 fathoms more to sink this winze. Having a rich lode at the 184, 174, and also in this winze, there is almost a certainty of a very rich piece of tin ground, for the 20 fathoms in height, and the length is not yet ascertained. We can safely say this part of the mine has not looked so well for a considerable time past. All the stopes throughout the mine are looking exceedingly well.

The water is abating in Edward's Shaft gradually; it has gone down about 6 fathoms; there remains about 9 fathoms more. They are preparing the necessary work to attach to Old Metal Engine, and hope to sink the shaft some fathoms this summer without the aid of the rods.

### TRANNACK,

in Sithney (land of Joseph Lyle, Esq., and others) was recommenced in 1860, the water being drawn off by a water-wheel, for turning which the river Looe supplies abundant power. The former working, 32 years ago, by similar machinery, was on a part only of the present sett, where the depth of the mine is about 100 fathoms. The new part is 40 fathoms deep. *Purser and Manager*, Mr. John Reed. 20 men employed.

### TRANNACK,

in St. Erth, had been worked two or three years, and stopped about ten years ago. Little returns, if any.

### NANJILES,

in Kea, Cornwall, in 1,024 shares. *Pursers*, Messrs. B. Matthews and Son, St. Day. *Manager*, Captain James Rowe, Camborne. *Landowner*, Lord Falmouth. Dues, 1-18th. Depth of adit at engine shaft, 18 fathoms; depth under adit, 117 fathoms 100 men, 30 females, and 15 boys employed. Rock, clay-slate. Pumping-engine, 80-inch diameter. Stamping, winding, and capstan-engine, 30-inch.

There is no knowledge now as to the beginning of the opera-

tions in this mine, but the present Company resumed the works in 1862.

It lies east of Wheal Clifford. In ancient times the mine was rich. Clifford lodes run through the sett, and it is well known that the large courses of ore in Clifford dip rapidly east into Nanjiles. The position of the ground is all that could be wished, and the prospects even before the ore was discovered in the engine-shaft were sufficiently good to warrant a most favourable prophecy as to its great and lasting success. It was worked many years ago by Messrs. Williams and Co., and is now in the hands of a very respectable company, including Mr. W. Williams, Mr. R. Lanyon, Mr. Bickford, Dr. George Smith, &c.

### NORTH JANE,

in Kenwyn, Cornwall, in 6,000 shares. *Purser*, Mr. Thorman Woodward, Truro. *Secretary*, Mr. William Bartlett, Bucklersbury, London. *Manager*, Captain James Rowe, Camborne. *Landowners*, Lord Falmouth and J. W. Buller, Esq. Dues, 1-18th. Depth of adit, 30 fathoms; depth under it, 40 fathoms. Pumping-engine, 30-inch. 31 men, 13 females, and 20 boys employed. 3 water-wheels stamping tin, lifting 15 heads. Rock, clay-slate and elvan.

#### MINERALS SOLD IN 1864.

		Tons. cwt. qrs. lbs.					£	s.	d.
Black tin	...	18	7	1	3	...	1,096	0	7
Tin stuff	...	151	1	1	0	...	174	15	6
Silver ore	...	69	16	0	0	...	52	0	1
Arsenic	...	57	9	3	0	...	49	0	7
							<hr/>		
							£1,371	16	9
							<hr/>		

The present Company has been at work four years. Operations were first commenced in the lead lodes, which contain large quantities of blende: at that time blende was so low in price as scarcely to be worth raising. The lead, however, is of unusual richness, having sold for £30 per ton; and it is the prevailing opinion that had but a quarter of the expended capital been laid out in opening those lodes, a profitable mine would have been the result. It was at that time deemed expedient, with the then high price of tin, to commence to work for that mineral on a large lode seen to the west, about half a mile from where the engine was erected, when intended to develop the lead lodes. Horizontal rods were attached, and having but little water, a shaft

was sunk 70 fathoms from surface, at which depth there is every appearance of satisfactory discoveries being made.

This mine adjoins Wheal Jane. As Wheal Jane lode underlies south, and North Jane underlies north, these tin lodes will form a junction in depth, when immense quantities of tin may be fairly expected. And when we remember that Wheal Jane, on an outlay of £3 10s. per share, has given dividends of £15 10s. per share, with a prospect of still increasing dividends, we may be sanguine as to North Jane. It is now contemplated by North Jane shareholders to sink a shaft near their boundary to intersect Wheal Jane lode, which can be done by sinking about 40 fathoms. When that has been accomplished, no doubt North Jane will become a valuable property, and the Company will be rewarded for their perseverance.

### TOLCARNE,

in Camborne, Cornwall, in 6,000 shares. *Pursers*, Messrs. Taylor and Sons, London. *Local Purser*, Mr. J. P. Bennetts, Falmouth. *Manager*, Captain Joseph Jewell, Redruth. *Landowner*, Sir R. R. Vyvyan, Bart. Dues, 1-15th. Depth of adit, 35 fathoms. Depth under it, 60 fathoms. Pumping and winding engine, 18-inch. Rocks, granite and clay-slate. 78 men, 20 females, and 22 boys employed.

#### MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.					£ s. d.			
Copper ore ...	843	1	2	0	...	for ...	3,262	13	3

The present Company commenced about five years ago. Their operations have been explorative, and their success all that could be reasonably expected under the circumstances. Their prospects are good, and dividends at an early date may be expected. The mine is situated in the Camborne group.

### EAST TRESKERBY,

in St. Agnes, Cornwall, in 1,024 shares. *Secretary*, Mr. G. H. Cardozo, 15 New Broad Street, London. *Manager and Local Purser*, Captain John Nancarrow, St. Ives. *Mineral Owners*, of tin, Duke of Cornwall, one half; Lords of Manor of Tywarnhayle Tyas, one half; of copper, Messrs. Williams, Ley, Jago, and Geach. Dues of copper 1-12th; tin 1-15th. Depth of adit, 8 fathoms. Depth below it, 42 fathoms. Rock, clay-slate. Pumping-engine, 30-inch. 28 men, 2 females, and 8 boys employed.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore ...	9	20	2	0	...	for ...	91	10	7
Tin stuff ...					...	„ ...	911	13	10
							<hr/> £1,003 4 5 <hr/>		

The Company commenced in 1860. Judging from what they have already returned from shallow levels, we may calculate on ultimate success. They have several promising lodes, which should be prosecuted to deeper levels.

## EAST DOWNS,

in St. Agnes, Cornwall, in 1,200 shares. *Purser*, Mr. Henry Michell, St. Day United. *Manager*, Captain John Waters, Whitehall. *Landowners*, Duke of Cornwall and others (for tin); for copper, Messrs. Williams, Ley, Jago, and Geach. Dues, tin, 1-15th; copper, 1-12th. Depth of adit, 50 fathoms. Depth below it, 30 fathoms. Rock, clay-slate. 70 men, 10 females, and 20 boys employed.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore 44	9	3	0	...	for ...		£208	14	1
Tin stuff				...	„ ...		38	10	6
							<hr/> £247 4 7 <hr/>		

The Company began to do a *little* in September, 1862; they are now working energetically in sinking an engine-shaft (a new one), in order to prosecute the mine in depth. Their prospects are very cheering. Mr. Sampson Waters is a large shareholder.

## WHEAL ROSE,

in St. Agnes, Cornwall, in 2,000 shares. *Purser*, Mr. H. Michell, St. Day United. *Manager*, Captain George Tremayne, Wheal Rose, Scorier. *Mineral Owners*, Duchy, half of tin; Lords of Tywarnhayle Tyas, other half; of copper, Messrs. Williams, Ley, Jago, and Geach. Dues of tin 1-13th, of copper 1-18th, Depth of adit, 42 fathoms. Depth under it 90 fathoms. Pumping-engine, 70-inch. Winding and crushing engine, 24-inch. 195 men, 100 females, and 45 boys employed. Rock, clay-slate.



## MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.					£ s. d.		
Copper ore...	2,691	16	2	0	...	for ...	14,432	11 1

. Present Company began work on June 2, 1862, and had immediate success, which still continues. A former Company who abandoned the sett about 60 or 70 years ago, is said to have realised a large profit out of the mine. Mr. Sampson Waters is the principal shareholder, and he is said to be successful everywhere.

## WHEAL PINK AND CLINTON CONSOLS,

in Gwennap, Cornwall (near Scorrier). *Manager*, Captain Joel Higgins, Scorrier. *Pursers*, Messrs. Williams. *Landowners*, Lord Clinton, and Mr. W. R. Hill's representatives. Rocks, clay-slate and granite. A small steam-engine is at work, and the engine shaft is being sunk, it was lately commenced from surface. They have been at work, in present site, about 2 years; they worked in other parts of the sett more than 30 years ago. It has not been profitable.

## GRAMBLER AND ST. AUBYN,

in Gwennap and Redruth, Cornwall, in 486 shares. *Purser*, Mr. F. W. Dabb, Redruth. *Manager*, Captain John Michell, Gwennap. *Landowners*, Mr. Beauchamp's representatives, half; Mr. Pen-darves, half of Grambler. Duke of Buckingham, 11-16th, and C. Trelawny, Esq., 5-16th of other lands (Tolcarne). Dues, 18th, Tolcarne; 1-24th Grambler. Depth of adit, 44 fathoms. Depth under it, 96 fathoms. Rocks, granite and elvan. 40 men, 3 females, and 30 boys employed. Pumping-engine, 60-inch. Winding-engine, 18-inch.

This *was* a dividend mine, but is not so at present. They have been making calls for several years, but the prospects are much improved of late; the returns will shortly, it is said, meet the cost.

## SOUTH WHEAL TOLGUS,

in Redruth, Cornwall, in 512 shares. *Pursers*, Messrs. John Taylor and Sons, London. *Local Purser*, Mr. John Haye, Redruth. *Manager*, Captain Joseph Jewell, Redruth. *Landowner*, J. W. Buller, Esq. Dues, 1-15th. Depth of adit, 30 fathoms. Depth under adit, 157 fathoms, where they are now sinking on the lode. Rock, clay-slate. Pumping-engine, 60-inch.

Winding and crushing engine, 24-inch. 105 men, 30 females, and 20 boys, employed.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.			£	s.	d.
Copper ore...	2,100	9	0	...	sold for ...	11,684	3	0
Tin stuff...	...	...	...	...	„ „ ...	473	7	8
Lead ...	...	...	...	...	„ „ ...	6	8	10
						<hr/> £12,163 19 6 <hr/>		

Operations began about 20 years ago, and since then the Company have divided upwards of £40,000 profit; but for the present, dividends have ceased. It is hoped that, under the good management which characterises Messrs. Taylors' mines, dividends will be resumed at no distant date.

## SOUTH WHEAL SETON,

in Camborne, Cornwall, in 400 shares. *Purser*, Mr. Benjamin Matthews, St. Day. *Managers*, Captains Henry Higgins and Malachi Bath, Camborne. *Landowner*, John Francis Bassett, Esq. Dues, 1-18th. There is no adit to present workings, but at *other* part the adit is 10 fathoms deep. Depth from surface, 60 fathoms. Pumping-engine, 80-inch. 32 men, 1 female, and 2 boys employed. The "country" is clay-slate. There were no minerals sold in 1864. The original workings commenced about 9 years ago, and have been continued regularly ever since. The Company recently changed their base of operations by abandoning the southern part of the sett, and erecting a larger engine on the northern part. They have not yet reached the depth at which it is usual to find wealth in the mines in that district; they must go deeper on their kindly lodes to meet with a realisation of their hopes. The lodes of West Seton are said to pass through this sett.

## WEST WHEAL TOLGUS,

in the parishes of Illogan and Redruth, Cornwall, in 512 shares. *Pursers*, Messrs. Taylor and Sons, London. *Local Purser*, Mr. Haye, Redruth. *Manager*, Captain Joseph Jewell, Redruth. *Landowners*, T. J. Agar Robartes, and J. W. Buller, Esqrs. Dues, 1-20th. Depth of adit, 31 fathoms; depth below adit, 81 fathoms. Pumping-engine, 60-inch. Winding and crushing-engine, 24-inch. 81 men, 30 females, and 9 boys employed. Rock, clay-slate.

## MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.			£	s.	d.
Copper ore ...	578	20	2	0	... for ...		3,632	13	11

This mine was slightly worked about twenty years ago by the late Captain William Richards and Co. The present Company commenced about five years ago. Their success has not been what we could wish, but their prospects are fair. The mine is in a rich locality.

## NORTH ROSKEAR,

in Camborne, Cornwall, in 700 shares. *Purser*, Mr. Thomas W. Field, Marazion. *Manager*, Captain Joseph Vivian, Camborne. *Landowners*, Messrs. Pendarves, Basset, and Enys. Dues, 1-20th. Depth of adit, 37 fathoms; depth below adit, 240 fathoms; but the present workings are above 205-fathom level. 300 men, 194 females, and 111 boys employed. The "country" is clay-slate and greenstone. Pumping-engine, 70-inch. Stamping-engine, 36-inch, lifting 96 heads. Winding-engines, 28-inch.

Operations by the present Company began about the year 1818, and profits amounting to about £110,000 were divided before the minerals were so reduced as to fall below the cost, which occurred about ten years ago. They have latterly erected a steam stamping-mill, and made other additions and improvements necessary in a *tin mine*, which this has now become; and it is expected, after a little time, that the mine will become self-supporting, if not something better. The lodes are numerous.

## ROSKEARNOWETH,

in Camborne, Cornwall, in 700 shares. *Purser*, Mr. T. W. Field, Marazion. *Manager*, Captain Joseph Vivian, Camborne. *Landowners*, Messrs. Hartley, Basset, and Enys. Dues, 1-20th. Depth of adit, 37 fathoms; depth under adit, 70 fathoms. Rocks, clay-slate and greenstone. 17 men and 1 boy employed. No machinery, except a whim or two.

This mine was a part of North Roskear till February, 1863, when it was separated, with an intention to work it effectually as a distinct mine, which has not yet been done. It will never be so worked until an engine has been erected, to enable the miners to sink much deeper, which the character of the lodes fully warrants. A large quantity of copper ore has been taken away from time to time, but in 1864 none was sold. In this district few mines are rich at shallow levels. Their motto should be, "sink! sink!"

## EAST WHEAL TOLGUS,

in Redruth, Cornwall, in 256 shares. *Pursers*, Messrs. John Taylor and Sons, represented by Mr. J. P. Bennetts, Falmouth. *Manager*, Captain Joseph Jewell, Redruth. *Landowners*, Messrs. Chadwick, Garden, and Michell. Dues, 1-16th. Depth of adit, 22 fathoms; depth below adit, 82 fathoms, but present workings not under 34-fathom level. Rocks, clay-slate and 2 elvan-courses. 21 men, 1 female, and 5 boys employed. Pumping-engine, 30-inch. Stamping and winding-engine, 22-inch. Mineral sold in 1864, *nil*.

Sixteen years' trial has been given to this mine without success, and from the very limited scale of the present operations, it is very doubtful if any success will follow. The district is good.

## NORTH GRAMBLER,

in Redruth, Cornwall, in 1,361 shares. *Pursers*, Messrs. R. H. Pike and Son, Camborne. There is a committee of management, represented by Captain William Pascoe, of Redruth, the resident agent. *Landowners*, Messrs. Williams and St. Aubyn. Dues, 1-15th. Depth of mine, 95 fathoms; no adit. There is a 30-inch pumping-engine at work, and 35 men, 3 females, and 6 boys. Rock, granite.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.			£	s.	d.
Copper ore ...	151	0	0	0	...	for ...	910	14	11
Tin stuff ...	...	...	...	...	...	„ ...	795	6	4
							<hr/>		
							£1,706	1	3
							<hr/>		

This sett is very small, but the length on the course of the lode is considerable as compared with the width. They have been working 10 years, but not successfully. They are now sinking the engine shaft, and the prospects of success are fair.

## WHEAL CUPID,

in Redruth, Cornwall, has been idle about 18 months. The depth of mine to adit is 16 fathoms, and below it 73 fathoms. *Landowners*, Messrs. Williams and St. Aubyn.

## SOUTH GORLAND,

in Gwennap. Idle.

## NORTH DAMSEL,

in Gwennap. Idle.

This with South Gorland were formerly worked as one mine, and called "West Wheal Jewell," when a large sum was lost. They had always *some* tin, but not sufficient to cover costs.

## TRELOWETH,

in St. Erth, Cornwall, in 5,000 shares. *Purser*, Mr. J. Call, London. *Manager*, Captain Thomas Richards, Redruth. *Landowner*, Edward St. Aubyn, Esq., Devonport. Depth of adit, 4 fathoms; depth under it, 154 fathoms. Pumping-engine, 60-inch. Winding-engine, 16-inch. Rocks, clay-slate and elvan.

The works were suspended on 25th March, 1865, and the materials are to be sold. The Company, who commenced to work about 15 years ago, have shown great patience, having persevered so many years under such a heavy and continuous loss. They have fairly proved the ground to be unworthy of further trial.

## NEW WHEAL SETON,

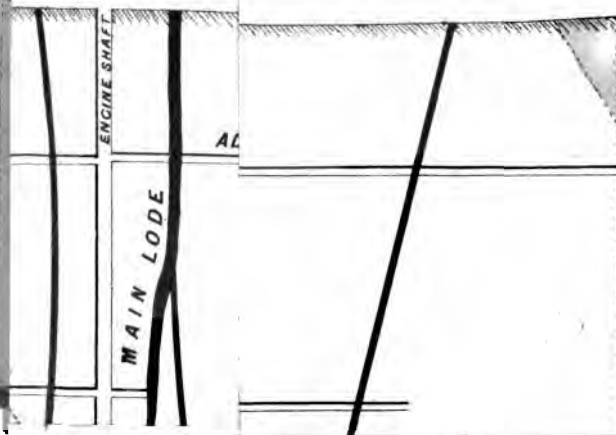
in Camborne, Cornwall, in 400 shares. £19,000 expended; no returns. Messrs. B. Matthews and Son, St. Day, are *Pursers*. Captain Malachi Bath, *Manager*. 26 men and 6 boys employed. *Landowner*, J. F. Bassett, Esq. Dues, 1-15th. Depth of mine under adit, 80 fathoms. Adit, about 16 fathoms. Steam (draught) engine, 45-inch. Winding-engine, 26-inch. This mine is one of the few in Cornwall, which have yielded no returns, and yet great confidence is felt in the ultimate result, because of its proximity to West Seton, which has a world-wide celebrity and is the western part of that mine, from which it was severed, by consent of all parties, a few years ago. The shareholders of West Seton, who chose to take shares in it, having precedence to non-shareholders. The ground being "virgin," time is wanted to open it; which, when opened, will, it is believed, become as good as its rich neighbour.

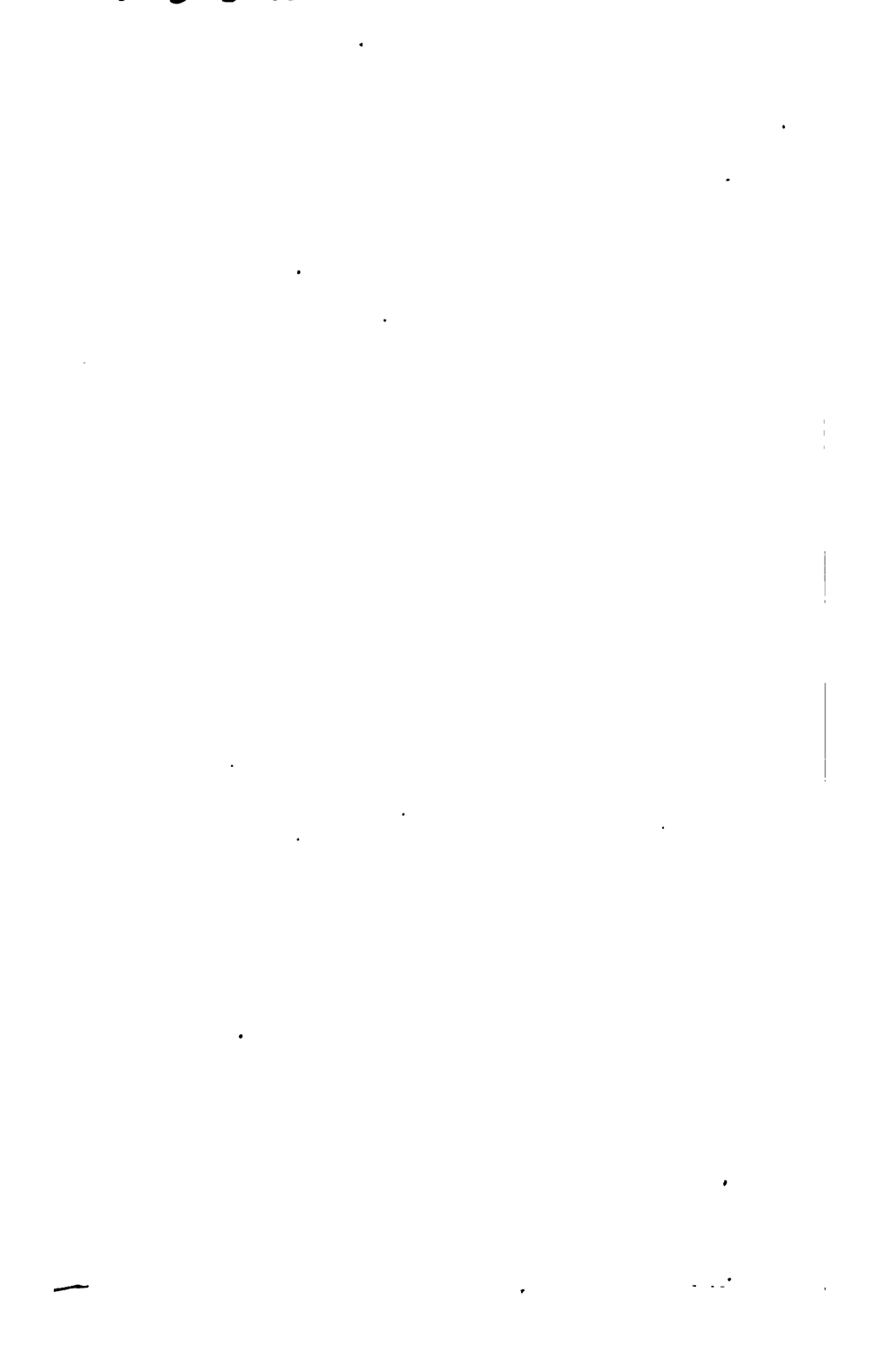
## DOLCOATH,

in the Parish of Camborne, Cornwall (in 358 shares), has been worked, by successive companies, from time immemorial. The present Company commenced in the year 1800, and the *Manager*, Captain Charles Thomas, has been connected with the mine, in some way or other, all the period between that date and the present time. The profits made by the present working amount

# COAT

## SE SECT





to £279,777. In the year 1864 (included in that sum) they amounted to £14,678. Like the contiguous mines it commenced as a copper mine, but the deep levels yield very little copper, but almost exclusively tin; and it is said that the reserves of the latter mineral are sufficient to occupy the industry of more than one generation. The price of tin having declined, so has the amount of the dividends, from £10 per share to £5 at bi-monthly meetings. The Company have no wish to increase their sales to supply the lack of *price*, which they *could* do. A committee of management act as *Purser*, and draw cheques for pay. The *Manager*, is Captain Charles Thomas, of Killivose, Camborne. The rocks are granite and clay-slate—traversed by elvan dykes. Granite from 100-fathom level to bottom at engine-shaft. Number of persons employed, 1,204: viz., men, 691, females, 352, and boys, 161. The *Landowner* is J. F. Basset, Esq. Dues, 1-24th. Depth of adit, 30 fathoms. Under adit, 280 fathoms. The steam-engines in use are—2 pumping, viz., 76 and 60-inches respectively; 2 stamping-engines, of 38 and 26-inch each; and 5 winding-engines, of 30, 26, 20, 20, and 19 inches each; and Man-engine, 18-inch cylinder. Water-wheel for crushing, 40 feet by 2½ feet. Water-wheels for stamping, one 26 by 4 feet, two 14 feet by 4 feet, and three 16 feet by 2 feet.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.			£	s.	d.
Copper ore...	609	0	0	0	...	for	3,195	9	4
Black tin ...	1,033	14	3	14	...	„	67,374	1	9
Arsenic ...	110	0	0	0	...	„	110	0	0
							<hr/> £70,679 11 1 <hr/>		

## EAST CARNBREA,

in Redruth, Cornwall, in 6,000 shares. *Secretary*, Mr. W. A. Buckley, London. *Purser*, Mr. George Lightly, Redruth. *Manager*, Captain Thomas Glanville, Redruth. *Landowner*, Lord Clinton. Dues, 1-20th. Depth of adit, 20 fathoms. Depth under it, 80 fathoms. Rock, clay-slate. 180 men, 60 females, and 14 boys employed. Pumping-engines, 70 and 40 inches. Winding-engine, 20-inch. Crushing-engine, 14-inch.

## CROWAN CONSOLS,

in the Parish of Crowan, Cornwall, in 2,500 shares. *Purser*, Captain Wm. Paul, Pool, Illogan. *Manager*, Captain Joseph



Vivian, North Roskear. *Landowner*, Rev. H. M. St. Aubyn. Dues, 1-18th. Adit, 12 fathoms. Depth below, 39 fathoms. 30 men and 7 females employed. Rock, clay-slate. 1 pumping-engine, 48½ inches. The works were resumed about 2 years ago by a "Limited" Company; but the capital subscribed being too limited to continue the works, further capital has been raised by a conversion of the Company into the cost book system. It is now hoped that a highly promising mine will be fairly tested. It is near the celebrated Wheal Abraham.

### EAST WHEAL VOR,

in the Parish of Sithney, Cornwall, in 6,000 shares. *London Secretary*, Mr. J. H. Murchison. *Purser*, Mr. William Watson, Plymouth. Management by Committee. *Agent*, Captain James Pollard. *Landowner*, C. W. Popham, Esq. Dues, 1-24th. Adit, 16 fathoms deep. Depth below, 80 fathoms (now sinking under that level). 25 men, 1 female, and 1 boy employed. Rocks, granite and slate. Pumping-engine, 40-inch. Stamping-engine, 30-inch (now idle).

#### MINERAL SOLD IN 1864.

	£	s.	d.
Black tin ... ..	203	5	2

The present Company began operations in March, 1864. There are several lodes in the sett waiting for a demand on their resources which are supposed to be large. A liberal outlay and spirited enterprise are wanting here.

### EAST GREAT WORK (LIMITED),

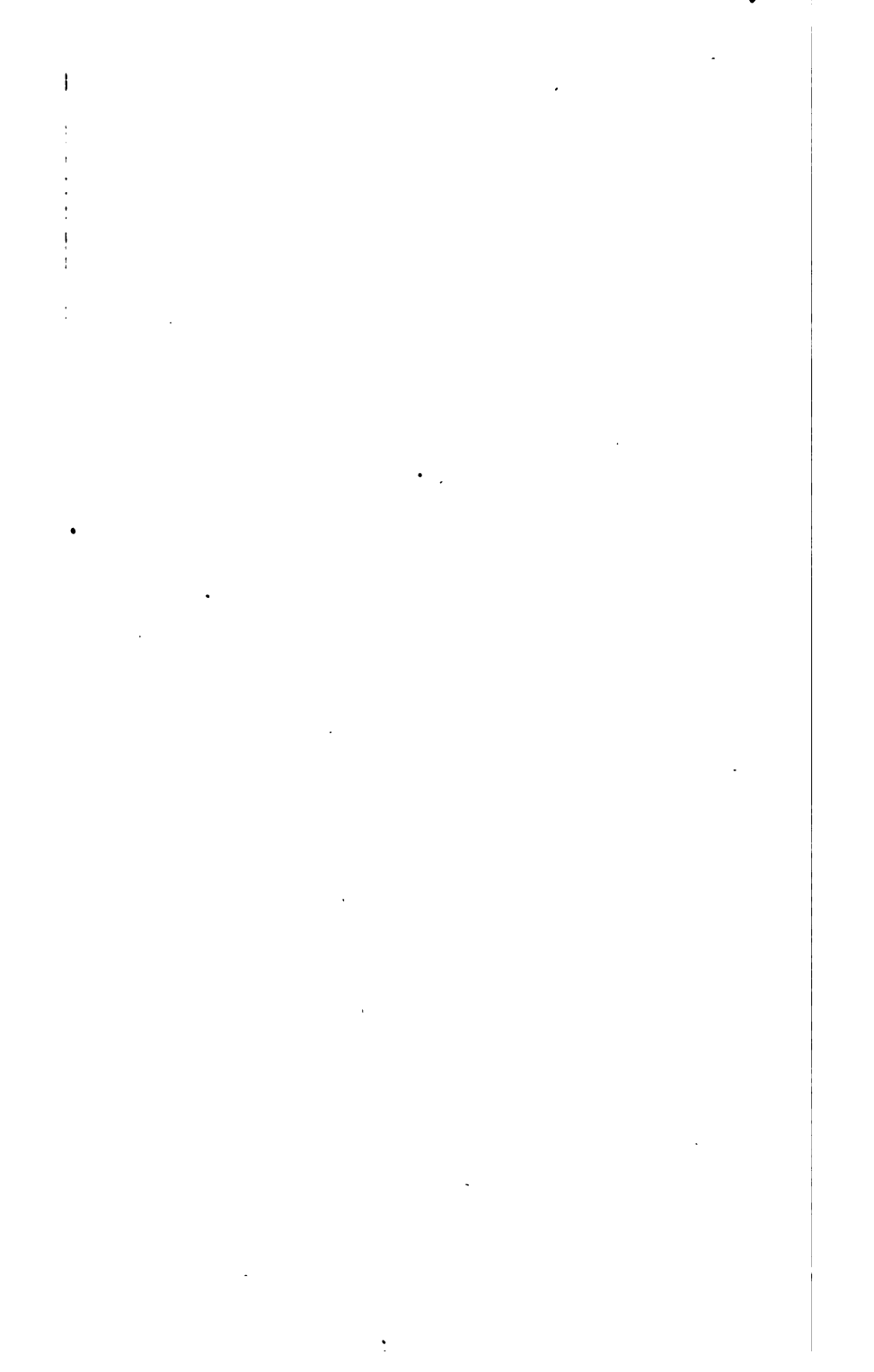
in Breage, Cornwall, in 6,000 shares. *Secretary*, Mr. C. Strong, Waterloo Place, Pall Mall, London. *Landowner*, C. W. Popham, Esq. Dues, 1-20th. Depth of adit, 14 fathoms. Depth under adit, 30 fathoms. Rock, clay-slate. 17 men employed. Pumping-engine, 40-inch. No mineral sold in 1864. Old workings resumed by present Company 1½ years ago. It is to be feared that the present Company will not derive the advantages held out by the appearances of the lode; for I have heard that only a portion of their capital has been paid up, because all their shares are not subscribed for. That is the position of many limited companies now at work. Probably some other party will follow to take the benefit of deeper working. The lode contains tin and copper very kindly. As its name imports, it lies eastward of Great Work Mine, long known as a rich tin mine.

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## NEW HENDRA,

in Breage, Cornwall, in 400 shares. Mr. George Noakes, Gresham House, London, is the *Purser*. Management is by Great Wheal Vor Committee, of whom Mr. Noakes is the chief. *Agent*, Captain Richard King, Ashton, Breage. *Local Purser*, Mr. William Argall, Wheal Vor. *Landowners*, Duke of Leeds, and Messrs. St. Aubyn, Buller, James, and others. Dues, 1-18th. Depth of mine, 30 fathoms (adit). 25 men employed. Rocks, granite and slate (killas). Pumping and stamping-engine, 24-inch (rotary) now being erected.

## MINERALS SOLD IN 1864.

	£	s.	d.
Copper ore ... ..	12	0	0
Tin stuff ... ..	65	0	0
	<hr/>		
	£77	0	0
	<hr/>		

Workings commenced, or resumed, only 12 months ago, where the ancients had left the usual evidences of their labour—viz., large burrows, and deep surface excavations on the lodes. The lodes are numerous and very promising. As soon as the stamping apparatus are in perfection, large returns of tin can be made, and profits divided.

## NEW ROSEWARNE,

in Gwinear, Cornwall, in 1,024 shares. *Purser*, Mr. William Huthnance, Rosewarne, Gwinear, near Camborne. *Managers*, Captains Joseph Vivian and Son, North Roskear. *Proprietor of the Land*, Mr. William Huthnance. Dues 1-18th. 72 men, 50 females and 4 boys employed. Rock, clay-slate. Depth of adit, 11 fathoms; depth under adit, 84 fathoms. Pumping-engine, 66-inch.

## MINERALS SOLD IN 1864.

	£	s.	d.
Copper ore ... ..	2,703	3	0
Black tin ... ..	2,204	13	9
	<hr/>		
	£4,907	16	9
	<hr/>		

This sett was separated from Rosewarne United in January, 1863, soon after which a great improvement took place in the levels, and the returns nearly meet the expenses. There was a

small loss (about £500) in 1864. It is hoped that in future a profit will be made.

### NORTH DOWNS,

in Redruth, Cornwall, in 6,000 shares. *Purser and Manager*, Mr. Francis Pryor, Redruth. *Agent*, Captain John Grenfell, at the mine. 56 men, 8 females, and 5 boys, employed. Depth of adit, 47 fathoms; depth below, 85 fathoms, now sinking. Rock, clay-slate and elvans. 1 Pumping-engine, 60-inch. 1 winding and crushing engine, 24-inch.

#### MINERAL SOLD IN 1864.

Copper ore     ...     ...     ...     ...     £3,791 9s. 11d.

This mine is in the manor of Sinns, a very old mining district. The present Company began their work about 10 years ago. At times, the prospects were bright, but they soon changed. The present returns fall short of the working cost. It is to be hoped that at deeper levels the circumstances will change for the better.

### NORTH DOLCOATH,

in Camborne, Cornwall, in 5,000 shares. *Secretary*, Mr. W. J. Lavington, 20 St. Helen's Place, London. *Local Purser*, Mr. Joseph Vivian, jun., Camborne. *Manager*, Captain Joseph Vivian, North Roskear. *Landowners*, Messrs. St. Aubyn and Pendarves. Dues, 1-18th. Depth of adit, 12 fathoms; depth under it, 85 fathoms. Rock, clay-slate. 17 men, 1 female, and 4 boys employed. Pumping-engine, 36-inch.

This mine was commenced about 6 years ago, soon after which a considerable quantity of argentiferous gossan, of high produce, was sold in a short time; but intelligent miners never expected a continuance of that mineral. In Dolcoath at the east, and East Rosewarne, Herland, &c., at the west, similar ore was found, but did not last many fathoms from surface. *Copper* is the ore looked for, and of this several parcels have been sold. The mine is a progressive one, so that a larger yield may be expected, and it is hoped that the Company will ultimately be benefited by their speculation.

### NORTH GRILLS

(late Wheal Lemon), in the parish of Germoe, Cornwall, in 4,096 shares. *Purser*, Mr. William Argall, Great Wheal Vor. *Manager*, Captain John Beare, Germoe. *Lords*, Messrs. J. P.

Lemon and others. Dues, 1-18th. Rocks, granite and slate. Adit 12 fathoms deep; depth under adit, 40 fathoms. 12 men, 3 females, and 3 boys employed.

## MINERAL SOLD IN 1864.

Black tin     ...     ...     ...     £250.

The Company began working about 2½ years ago. They have as yet no steam power, but are preparing an engine to draw and stamp. Soon after the stamps are ready, a large return of tin will be made. The prospects are said to be good. This mine is in the Grylls district.

## ROSEWARNE UNITED,

in Gwinear and Crowan, Cornwall, in 3,848 shares. *Purser and Manager*, Captain Thomas Richards, Redruth. *Landowners*, Rev. H. M. St. Aubyn, and Mrs. Hartley. Dues, 1-18th. Depth of adit, 20 fathoms. Depth below, 60 (now sinking under). Rock, clay-slate. 80 men, 20 females, and 8 boys employed. Pumping-engine, 40-inch. The present working, in the eastern part of the sett, commenced about 1½ years ago, on the partition of the western ground to New Rosewarne Company. The old mine—abandoned—was commenced about 16 years ago, and gave a large profit. The returns from the present workings about pay the current cost. Wheal Hender (formerly called Copper Bottom) is held by this Company.

## SITHNEY WHEAL METAL,

in the Parish of Sithney, Cornwall, in 4,048 shares. *Purser*, Mr. John Burgess, Burncoose, Illogan, near Redruth. *Manager*, Captain Thomas Julian, Great Wheal Vor. *Lord*, Sir Samuel Thomas Spry. Dues, 1-18th. Depth of adit, 6 fathoms. Depth below adit, 145 fathoms. 40 men, 1 female, and 2 boys employed. Pumping, stamping, and winding-engine, 30-inch rotary (double). No returns in 1864. Works commenced about 6 years ago; but although they are in close proximity to the rich Wheal Metal, the yield of tin has hitherto been very small. Hopes, however, are entertained that, at a deeper level, a large quantity of tin will be found. Wheal Vor makes tin in depth.

## WENDRON CONSOLS,

in Wendron, Cornwall, in 1,024 shares. *Purser*, Mr. Frederick

Hill, Helston. *Manager*, Captain Walter Johns, Wendro Landowners, Duke of Cornwall, Major Grylls, J. Bassett, T. A. Robartes, and P. Grenfell, Esqrs. Dues, 1-60th. Depth mine 72 fathoms (no adit). 184 men, 61 females, and 50 boys employed. Rock, granite. 1 pumping-engine, 60-inch. 1 winding-engine, 20-inch. 5 water-wheels stamping tinstuff.

## MINERAL SOLD IN 1864.

	Tons. cwt. qrs. lbs.					£	s.	d.
Black tin	...	117	0	2	16	...	for	7,153 17 1

Work commenced May, 1851. Upwards of £20,000 have been expended here. There were a few small dividends, but the mine is now standing amongst the "progressive" ones. It is hoped that its adversity will be removed, and that it will be re-instated in the "dividend" list.

## WHEAL CURTIS,

in Crowan, Cornwall, in 1,000 shares. *Purser*, Mr. B. Matthews, St. Day. *Manager*, Captain H. Skewis, Camborne. *Landowners*, Sir William Curtis, and others. Depth of adit, 1 fathoms; depth below, 50 fathoms. Rock, clay-slate. Pumping engine, 70-inch. Winding-engine, 26-inch. 70 men, 14 females and 6 boys employed. Several unsuccessful attempts at working this mine have been made; but all former companies failed for want of capital or spirit to try the mine. It is hoped that the present Company will not follow the example of the others by deserting the ground too hurriedly; but that they will develop the promising lodes which they have in their limits.

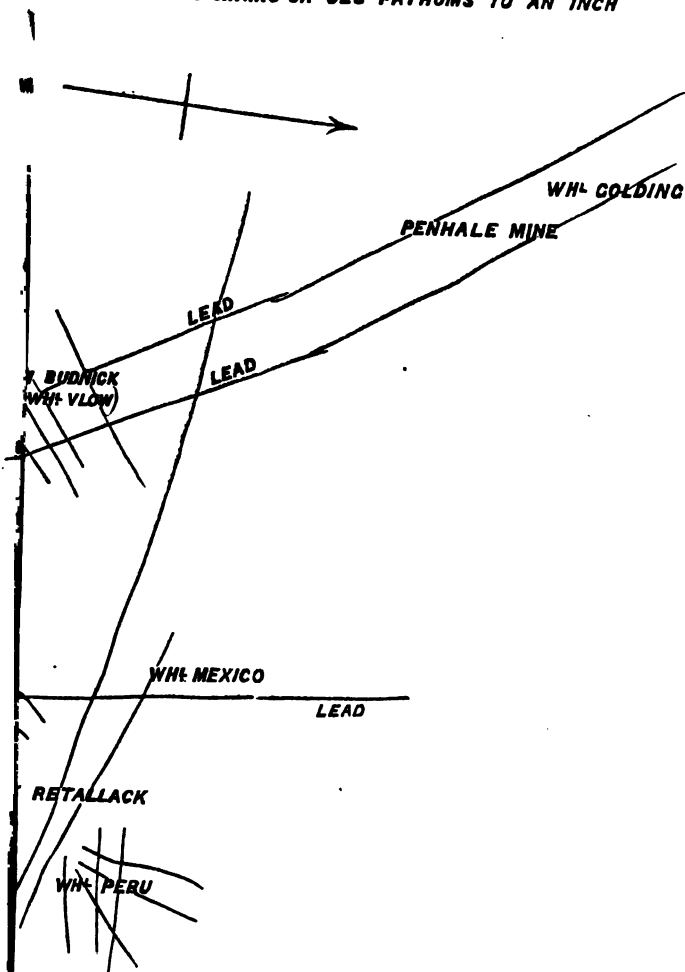
## COOK'S KITCHEN

in Illogan, Cornwall, in 2,450 shares, is under the management of Captain Charles Thomas. *Pursers*, Messrs. R. H. Pike and Son. *Lord*, J. F. Bassett, Esq. Dues 1-24th. 211 men, 86 females, and 71 boys employed; total 370. Depth of adit 28 fathoms; depth below, 258 fathoms. Steam power employed 1 55-inch pumping-engine, 1 26-inch stamping-engine, and 1 26-inch and 1 18-inch winding-engines. A 50-feet by 3-feet water wheel works a "man-engine." Water-wheels lifting stamp heads, viz., 1 50-feet by 2½-feet, 2 40-feet by 4½ feet, and 3 27-feet by 4 feet.

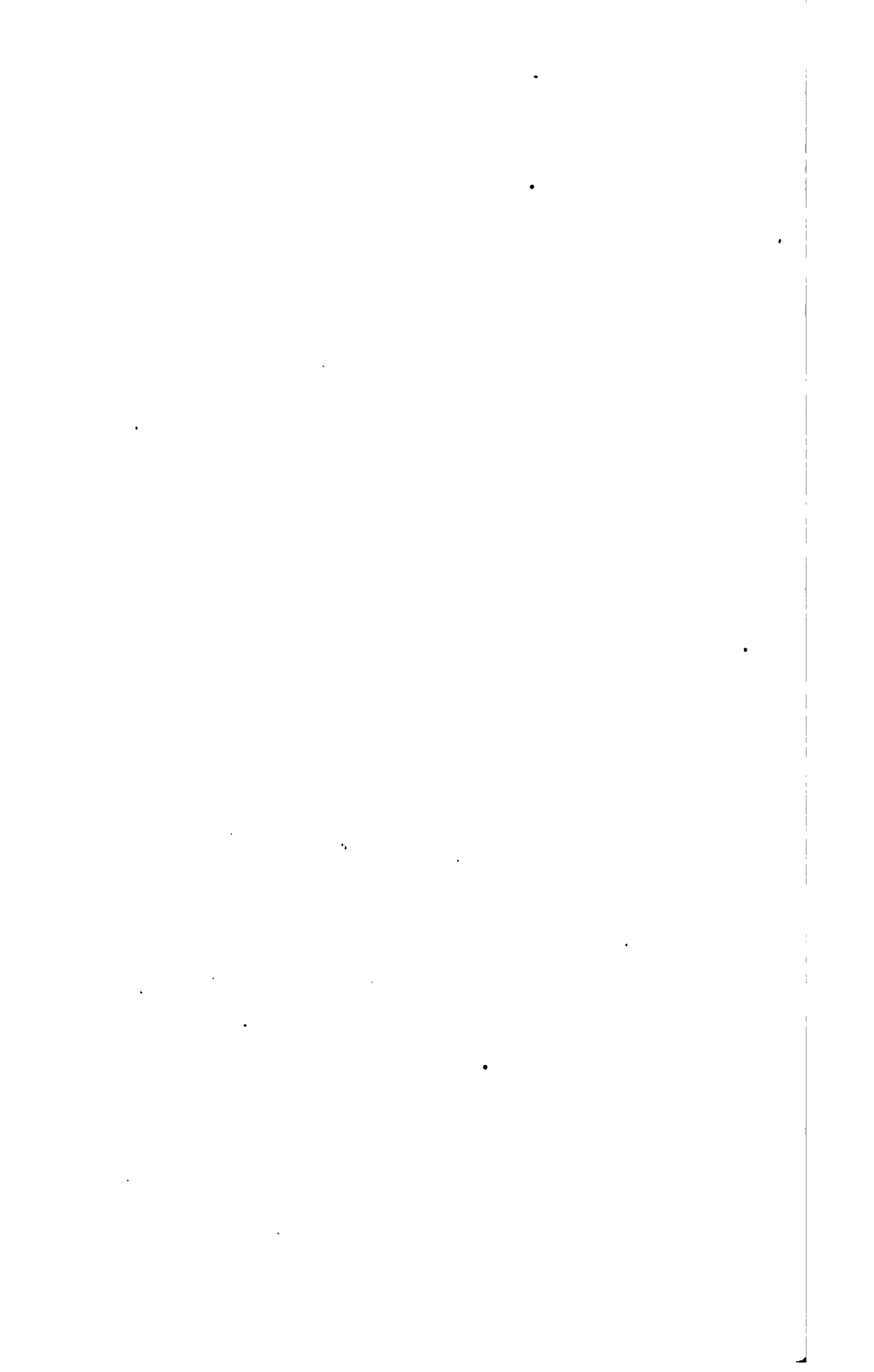
# PLAN OF THE POSITIONS OF THE MINES.

IN PERRANZABULO

SCALE 48 CHAINS OR 528 FATHOMS TO AN INCH







## MINERALS SOLD IN 1864.

	Tons cwt. qrs. lbs.						£	s.	d.
Copper ore	...	4	1	2	0	...	for	...	20 1 0
Black tin	...	240	13	2	11	...	,,	...	15,303 3 11
									<hr/>
									£15,323 4 11
									<hr/>

This mine is one of the very ancient works so frequently met with in this county. No record exists of its origin. It has been at work without intermission beyond the memory of man, with varying success. It is said, however, that on the whole a profit of some hundreds of thousands have been made. There has been no "call," I believe, since the year 1802. The loss of £1,225, in 1864, was occasioned principally by the purchase and erection of additional machinery. With a good price for tin, dividends may be expected for many years to come.

## BREWER,

in Gwennap, Cornwall, was a good mine, but stopped from poverty about 15 years ago. Depth about 70 fathoms under adit; adit, 40 fathoms.

## TRETHELLAN AND WEST TRETHELLAN,

in Gwennap, once dividend mines, ceased about 13 years ago. Adit, 40 fathoms; depth under, about 100 fathoms.

## PENSTRUTHAL,

in Gwennap, in the year 1827, and a few years following, yielded a profit of about £100,000. It stopped about the year 1836. A few years ago, Mr. Little, of Redruth, formed a Company and worked it about two years. The returns were small; but they sunk the mine very little.

## WEST CHIVERTON,

in Perranzabuloe, Cornwall, in 3,000 shares. *Purser*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain James Juliff, Truro. *Lords*, Mr. Peter Ley's exors., and Messrs. Jago, Geach, and Hoskin. Dues 1-15th. Adit, 5 fathoms; depth under adit, 90 fathoms. Pumping-engine, 80-inch. Winding-engine, 24-inch. Winding and crushing engine, 22-inch.

This is one of the great prizes which speculators occasionally find in their pursuit of mineral wealth. As is usual in such cases, this great discovery has given a stimulus to mining in Perranzabuloe. Engine-houses are springing up in all directions, and most of the land in the parish has either been leased for mining, or applied for to that end. I hope that favourable results will follow this great movement.

### WHEAL AGAR,

in Illogan, Cornwall, in 6,000 shares. *Secretary*, Mr. A. Buckley, London. *Purser*, Mr. Lightley, Redruth. *Manager*, Captain William Roberts, Pool. *Landowner*, T. J. Agar Robartes, Esq. Dues, 1-18th. Depth under adit, 120 fathoms. Pumping-engine, 60 and 36-inch. Crushing and winding engines, 24 and 18-inch. A small water stamping-mill. Rock, clay-slate. 65 men, 5 females, and 5 boys employed.

#### MINERALS SOLD IN 1864.

	Tons				£	s.	d.
Copper ore	37	...	...	sold for	...	161	0 0
Black tin	4	...	...	"	...	225	0 0
Tin stuff	...	...	...	"	...	138	0 0
						<hr/> £524	<hr/> 0 0

The late Captain J. Lyle put this mine to work about 20 years ago, and he and his co-adventurers have shown great patience, the mine having been all along a losing concern, and it still remains so.

### WHEAL TEHIDY,

which stands between Wheal Agar and Great South Tolgus, has been taken into those mines.

### NORTH BASSET,

Illogan, Cornwall, in 6,000 shares. *Secretary*, Mr. W. A. Buckley, London. *Purser*, Mr. Lightley, Redruth. *Manager*, Captain William Roberts, Pool. *Landowner*, Mr. Basset. Dues 1-20th. Depth of adit, 60 fathoms; depth under it, 122 fathoms.

Pumping-engines, 60 and 40-inch. Winding and crushing engines, 2 24-inch. 2 water stamping-mills. 85 men, 50 females, and 30 boys employed. Rocks, granite and clay-slate,

## MINERALS SOLD IN 1864.

	Tons					£	s.	d.
Copper ore	... 180	...	...	for	...	815	0	0
Black tin	... 27	...	...	,,	...	1,590	0	0
						<hr/> £2,405 0 0 <hr/>		

After paying good dividends, this mine has become poor, but as other mines in the locality become rich for tin in deep levels, it is probable that dividends will be resumed. The late Captain Josh. Lyle put this mine to work about 20 years ago.

## NORTH FRANCES,

in Illogan, Cornwall, in 2,500 shares. *Purser*, Mr. Thomas Pryor, Redruth. *Manager*, Mr. Francis Pryor, Redruth. *Land-owners*, Trustees of Mr. Pendarves. Depth of mine 110 fathoms ; no adit. Pumping-engine, 30-inch. Winding-engine, 20-inch. Rocks, granite and slate. 25 men and 2 females employed.

The works commenced about 12 years ago, and have been carried on at a loss ; but, as in the adjoining mines, perseverance is likely to be rewarded. All the adjoining mines of South Frances, North Basset, and West Basset, were worked for long periods at a loss, before they rewarded speculation. West Basset was abandoned by a Company before Captain Josh. Lyle took it in hand, but that mine is now the best in the locality.

## SOUTH FRANCES,

in Illogan, Cornwall, 496 shares. *Purser and Manager*, Captain William Pascoe, Camborne. *Mineral Owners*, Sir R. R. Vyvyan, and Messrs. Basset and St. Aubyn. Dues, 1-15th. Depth of adit, 22 fathoms. Depth under adit, 154 fathoms. Pumping-engine, 75-inch. A 36-inch engine is idle and for sale. Winding-engine, 24-inch. Winding and crushing-engine, 22-inch. 4 water-stamping mills (44 heads). 100 men, 20 females, and 30 boys employed. Rock, granite, with a little killas.

The sett was taken about 26 years ago. The profit has been £190,000 ; a small part of it was made in 1864. If the boundary question, which is now before the House of Lords, should be settled in this Company's favour, further dividends will soon afterwards be given, because about £20,000 worth of copper ore in disputed

ground lies discovered. The sett is very large, and ought to be divided into two, that the southern part might be thoroughly developed.

### SOUTH WHEAL GRENVILLE,

Camborne, Cornwall, 6,000 shares. *Purser*, Mr. Samuel Stephens, Camborne. *Secretary*, Mr. John Watson, 13 George Yard, Lombard Street, London. *Manager*, Captain George Odgers, Camborne. *Landowner*, Hon. G. M. Fortescue. Dues, 1-15th. Depth of adit, 22 fathoms; depth under, 4 fathoms. Pumping-engine, 30-inch. Rocks, granite, and two elvan courses. 12 men employed. No returns in 1864. The present Company commenced in January, 1864. The late Mr. Joseph Lyle commenced works in or about the year 1848, and continued about 10 years—but not vigorously—and then abandoned. Wheal Grenville and East Grenville lie northward of (and adjoining) this sett.

### WHEAL GRENVILLE,

(in 6,000 shares), Camborne, Cornwall. *Purser*, Mr. Samuel Stephens, Camborne. *Secretary*, Mr. John Watson, 13 George Yard, Lombard Street, London. *Manager*, Captain George Odgers, Camborne. *Landowner*, Hon. G. M. Fortescue. Dues, 1-15th. Depth of mine, 120 fathoms (no adit). Pumping-engine, 60-inch. Stamping-engine, 24-inch (32 heads). Winding-engine, 24-inch (double). Rocks, granite and clay-slate. 150 men, 46 females, and 45 boys employed.

#### MINERALS SOLD IN THE YEAR 1864.

	Tons. cwt. qrs. lbs.						£	s.	d.
Copper ore ...	258	18	0	0	...	for	1,988	13	0
Black tin ...	120	5	2	19	...	„	7,561	9	4
							£9,550	2	4

The present Company took the mine from Messrs. Taylor and Company about the year 1855, who commenced operations (where the “old men” left off) about 19 years previously. Hitherto the costs have not been met by the returns, but as the returns having been gradually on the increase, profits may be expected. Their machinery and appliances are now in good order for making the most of the ores brought up.

### EAST WHEAL GRENVILLE,

in Camborne, Cornwall, in 6,000 shares. *Purser*, Mr. Samuel

Stephens, Camborne, Cornwall. *Secretary*, Mr. John Watson, London. *Manager*, Captain George Odgers, Camborne. *Landowner*, Hon. G. M. Fortescue. Dues, 1-15th. Depth of mine, 83 fathoms (no adit). Rocks, granite and clay-slate. Pumping-engine, 60-inch. 1 water-stamping mill (8 heads). 70 men, 38 females, and 10 boys employed.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Copper ore ...	374	6	0	0	... for ...	1,398	0	0
Black tin ...	36	0	3	11	... „ ...	2,268	12	5
						<hr/> £3,666 12 5 <hr/>		

This mine was separated from Wheal Grenville six years ago. The character of the lode has been fluctuating, so as to vary the price of shares singularly fast. The reports have sometimes been very conflicting. The returns have not, and do not yet, meet current cost; but the prospects are good.

## BOSCAWEN,

in Kenwyn, Cornwall, in 6,000 shares. *Secretary*, Mr. Edward King, London. *Chief Accountant*, Mr. Isaac Thomas, Tuckingmill. *Manager*, Captain Richard Giles. *Landowner*, Viscount Falmouth. Dues, 1-24th. Depth of adit, 50 fathoms; depth under, 80 fathoms. Pumping-engine, 70-inch. Winding and capstan engine, 22-inch. 92 men, 15 females, and 19 boys employed. Rocks, clay-slate and elvan.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.		£	s.	d.
Copper ore ...	1,239	3	2	... for ...	5,905	11	0
Mundic (bargain) ...	...	...	...	... ..	7	0	0
						<hr/> £5,912 11 0 <hr/>	

This mine was a part of Great Wheal Busy United until four years ago. About 20 years since it was worked under the name of "Hallenbéagle," and yielded a profit.

## GREAT WHEAL BUSY

(in 6,000 shares), Parish of Kenwyn, Cornwall. *Secretary*, Mr. Edward King, London. *Chief Accountant*, Mr. Isaac Thomas, Tuckingmill. *Manager*, Captain John Edwards, Chacewater.

*Landowner*, Viscount Falmouth. Dues, 1-24th. Depth of adit, 46 fathoms; depth under it, 150 fathoms. Pumping-engine, 85-inch. Stamping-engine, 31-inch. Winding-engines, 22 and 22-inch. Crushing-engine, 20-inch. Rocks, clay-slate and elvan.

## MINERALS SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Copper ore ...	4,423	4	3	0	... for	12,960	9	7
Black tin ...	195	5	0	26	„	10,995	5	9
Arsenic ...	...	...	...	...	...	58	18	0
						<hr/>		
						£24,014	13	4

This is a very old mine; it was working in 1823 under the name of "Chacewater Mines," when Mr. Robert Vazie was the Manager. The present Company commenced in 1856, and have expended a large sum in machinery and other works. At present the returns nearly meet the current cost: I hope before long the returns will exceed that, so as to leave a balance divisible amongst the shareholders, who have shown such resolution in holding on so long.

## WEST BASSET,

in Illogan, Cornwall, in 6,000 shares. *Secretary*, Mr. W. A. Buckley, London. *Purser*, Mr. Lightley, Redruth. *Manager*, Captain William Roberts, Pool. *Mineral Owners*, J. F. Basset, Esq., Hon. G. M. Fortescue, and Sir R. R. Vyvyan. Dues, 1-15th. Depth of adit, 10 fathoms; depth under it, 164 fathoms. Pumping-engines, 70 and 60-inch. Winding-engines, 24 and 22-inch. Crushing-engine, 22-inch. 300 men, 90 females and 30 boys employed. Rocks, granite and slate.

## MINERALS SOLD IN 1864.

	Tons.		£	s.	d.
Copper ore ...	4,219	... for ...	28,105	0	0
Black tin ...	11	„ ...	682	0	0
Tinstuff ...	...	„ ...	284	0	0
			<hr/>		
			£29,071	0	0

Present Company commenced in 1851, and soon afterwards cut a valuable body of copper ore, which has not yet been exhausted, nor is likely soon to be so. The dividends have been considerable, and may be expected to continue for years to come.

## GREAT NORTH DOWNS,

in Redruth, Cornwall, in 5,000 shares. *Secretary*, Mr. E. King, London. *Chief Clerk*, Mr. Isaac Thomas, Tuckingmill. *Manager*, Captain James W. Crase, Blackwater. *Landowners*, Sir J. W. Lubbock, and Rev. H. M. Aubyn. Dues, 1-18th. Rocks, clay-slate, elvan, and granite, traversed by five cross courses. Depth of adit, 50 fathoms; depth below adit, 75 fathoms. Pumping-engine, 80-inch. Winding, crushing, and capstan-engine, 24-inch. 127 men, 44 females, and 10 boys employed.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore ...	905	12	0	0	...	for	4,520	3	1
Tinstuff ...	331	20	0	0	...	,,	666	5	10
							<hr/> £5,186 8 11 <hr/>		

This mine was worked to profit, by Messrs. Williams and Co. for several years ending in 1828. The present Company commenced in 1861. The probability is, that after sinking to a greater depth a level or two, the returns will exceed the current cost, which at present they do not meet. The mine is in a capital locality for riches.

## WHEAL BULLER,

in Redruth, Cornwall, in 256 shares. *Pursers*, Messrs. S. and R. Davey, Redruth. *Manager*, Captain James Inch, South Downs, Redruth. *Landowner*, J. W. Buller, Esq. Dues, 1-30th, reduced from 1-16th. Depth of adit, 14 fathoms; depth under adit, 145 fathoms. Pumping-engine, 40-inch. Stamping and winding-engine, 26-inch. Another winding-engine, 18-inch. 132 men, 62 females, and 17 boys employed. Rocks, granite and slate.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore 499	15	0	0	...	for	...	1,719	0	6
Black tin 71	1	2	16	...	,,	...	4,337	3	11
							<hr/> £6,056 4 5 <hr/>		

Old Wheal Buller was first worked by Messrs. Taylor and Co. for many years profitably. They abandoned the sett in or about the year 1847, when Messrs. Davey took it up, formed a Company, and made a call of £5 per 64th share. Before another call was made, they divided a net profit of £243,392. Subsequently calls



have been made, and, until lately, the prospects were so gloomy as to induce the Company to contemplate a sale of the mine or abandonment. Happily there have been some fresh discoveries, which will probably keep the mine at work many years, if the symptoms are not deceptive. Like many other deep mines in the district, the copper has decreased and tin increased, as will be seen by the returns for last year.

### TRESAVEAN AND TRETHARRUP,

in Gwennap. *Purser*, Mr. Edmund Michell, Tresavean. *Manager*, Captain John Pope, Redruth. *Landowners*, J. J. Rogers, and J. W. Buller, Esqrs. Dues, 1-24th. Adit, 30 fathoms deep; depth of the present workings, below adit, 12 fathoms; the old abandoned workings are 330 fathoms deep under adit. Pumping-engine, winding, and crushing-engine, is a 24-inch. The rocks are granite, slate, and elvan. 15 men, 1 female, and 5 boys employed.

Tresavean old mine gave a profit of about £500,000. The works were then almost entirely on one lode. The present operations are on another lode southward from that. (See East Tresavean.)

### BALMYNHEAR,

in Wendron, Cornwall, in 1,024 shares. *Purser*, Mr. John Taylor, Liskeard. *Manager*, Captain T. C. Burton, Redruth. *Mineral Owner*, Duke of Cornwall. Dues, 1-15th. Depth of adit, 10 fathoms; depth of present workings, 10 fathoms under adit. The old mine is about 70 fathoms under adit; that was where the late Captain Thomas Teague worked. 15 men, 1 female, and 3 boys employed. Rock, granite.

The work by the present Company commenced in July, 1864. The prospects for large returns of tin are very cheering. Mr. Charles Fox, of Falmouth, has a moiety of the shares. He is a bold speculator, and deserves success.

### GREAT BRIGGAN,

in Redruth, Cornwall, in 5,000 shares. *Secretary*, Mr. E. King, London. *Chief Clerk*, Mr. Isaac Thomas, Tuckingmill. *Manager*, Captain John Tredinnick, Scorrier. *Landowners*, Sir John Lubbock and the Rev. H. M. St. Aubyn. Dues, 1-18th. Adit, 42 fathoms deep; depth under it, 72 fathoms. Pumping-engines, 70-inch and 36-inch respectively. Winding-engine, 24-inch. 65 men, 12 females, and 2 boys employed. Rock, clay-slate.

## MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.				£	s.	d.
Copper ore ...	139	7	2	0	...	for	...	837	12	7

This mine adjoins Great North Downs, and its circumstances are analogous. Good results are expected. Operations, by present Company, began in 1860. The mine is very old.

## EAST TRESAVEAN.

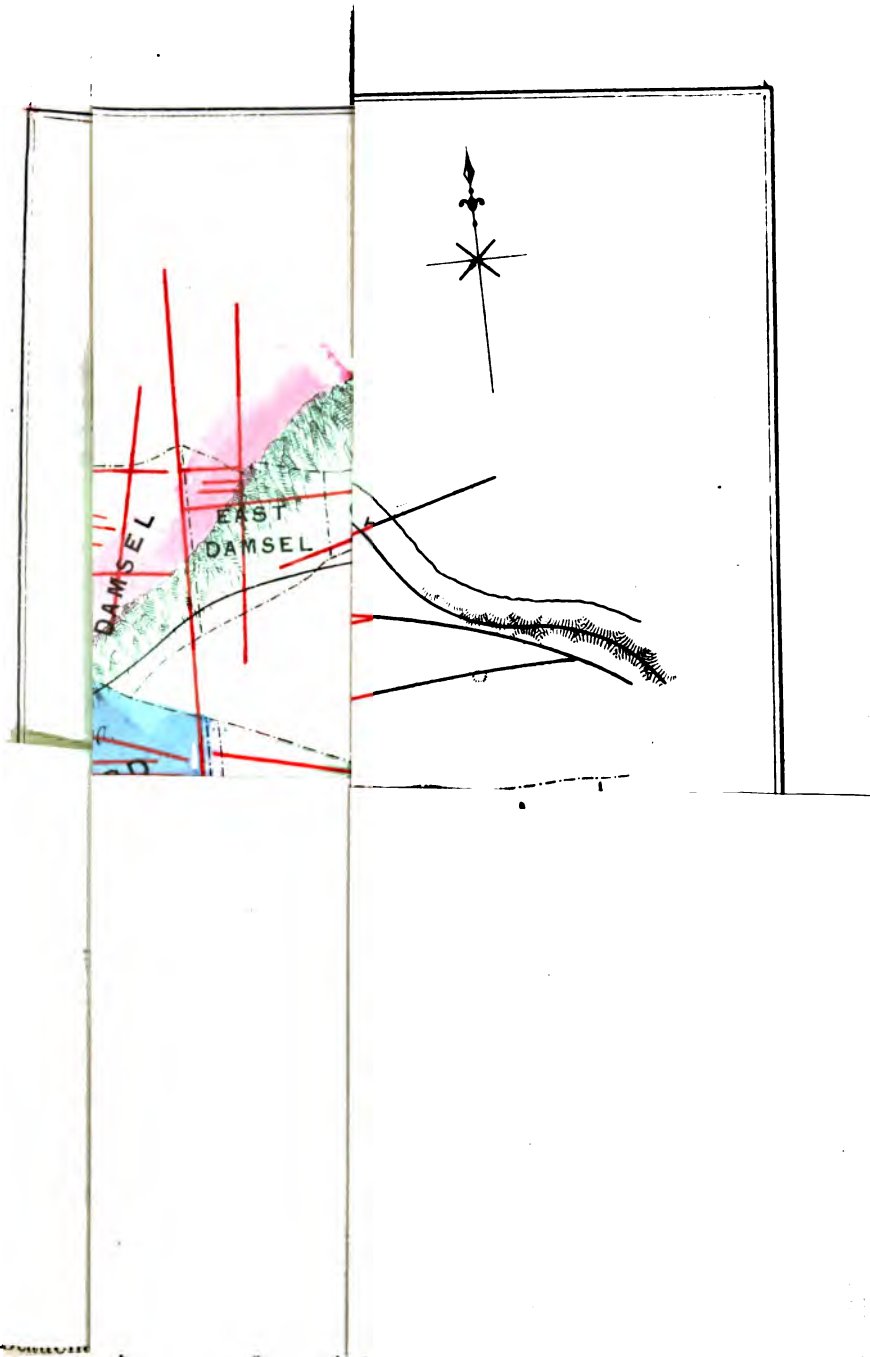
This mine lies in one of those remarkable subterranean valleys of slate, confined between two eruptions of granite, that furnish examples of the riches of the metallic deposits and other phenomena in their rocks, and which cause the mind to marvel at the great resources of Cornwall. One of the most extraordinary features of this line of lodes is, that in certain localities, about 200 fathoms below the surface, the water is so hot that the workmen are obliged to withdraw their feet from it, until by repeated attempts they become inured to the temperature; but the greatest wonder of all is the extraordinary amount of metal found in these rocks. For example, the Penstruthal and Tresavean lodes, that run into and through the East Tresavean sett (now comprising the old Treviskey grant recently added to it), for a distance of 600 fathoms, or three-fourths of a mile, have yielded the enormous amount of upwards of £4,000,000 worth of tin and copper; and divided amongst the shareholders upwards of £1,000,000 in the shape of profit, on an outlay, as far as Tresavean is concerned, of about £3,000, and probably in both mines not exceeding £10,000. If we take the time of working to be 25 years, it would give an income of £40,000 a year upon an outlay of £10,000, or a continued interest of 400 per cent. per annum; but we find Tresavean alone dividing as much as £60,000 in 1833, and it is recorded of Penstruthal, that it has sold as much as £30,000 worth of ore in a single month. In the face of such startling facts, can it be possible to doubt the value of the tin and copper mines as a source of national wealth, or the legitimacy of mining as an enterprise? The East Tresavean mine is situated immediately to the east of the old Tresavean mine, and adjoining it. The old Tresavean was the source of marvellous wealth 30 years ago, occupying, as has been stated, a large piece of ground in the run of these prolific veins. Further to the westward, and on the same line, is situated the famous Penstruthal mine; and also within the same valley, geologically speaking, the wealth of the rich Buller mines was created; it therefore requires very little insight into the nature of metallic lodes to be able to predict, without any fear of being accounted a false prophet, that East Tresavean,

with moderate capital and management, must soon be a source of immense metallic returns; for not only do the mines produce metal in great abundance, reckoning the value by the fathom, but the formation continues down in the earth's crust to an immense depth. In Tresavean the richest deposits were worked to a depth of fully 300 fathoms below the level of the sea. It is impossible to select a mining site possessed of greater natural advantages than East Tresavean, it being under the same geological conditions as the great Gwennap Consolidated Mines, which, from the same sort of lodes in the same sort of killas, a generation ago, yielded yearly profits to the extent of £50,000; and the United Mines and Clifford, in this identical rock, continue to reward the shareholders splendidly for their investment to the present day. It is useless to waste words in advocating the merits of such a grant as this, surrounded as it is by rich mines, and placed in the best metal-bearing slates of Cornwall. It is, however, wise to call attention to the facts connected with it in its early stages of development, otherwise it may be said, as is too often said in other instances, that the discoveries were merely the result of accident or chance. The mine is divided into 5,000 shares, 10s. per share paid. *Secretary*, Mr. Adam Murray, 34 New Street, Spring Gardens, Charing Cross, and Captain Gilbert, St. Day, Cornwall, is the *Manager*.

### NEW CLIFFORD,

in Gwennap, Cornwall. *Secretary*, Mr. M. Green. *Directors*, Messrs. Weston, Walmsley, Perkins, and Lubeham. *Offices*, 9 Gracechurch Street, London, E.C. *Agent*, Captain Joseph Michell. This mine was set to work about 9 months since, and the prospects are good. Its geological position is unexceptionable. On the west is Comford and Tresavean, on the North, Ting Tang (now West Clifford), and on the East, Clifford Amalgamated. The extent of the property is about 600 fathoms upon the course of the lodes, and 400 fathoms from north to south. The following statistical table of mines will show the great value of those surrounding this property.

	DIVIDENDS.
Tresavean (last working).....	£404,422
Beauchamp and Buller.....	120,000
Penstruthal.....	180,000
Jewell .....	250,000
Damsell .....	180,000
Gorland .....	150,000
Trekerby .....	200,000
Trethellan .....	48,000
Treviskey and Barrier (now a portion of East Tresavean) .....	37,000



which were very productive, near to the western extremity of this sett.

Trethellan .....	48,000
Treviskey and Barrier (now a portion of East Tresavean) .....	37,000

	DIVIDENDS.
Great Consols and United Mines (now Clifford Amalgamated) .....	£1,109,828
Unity .....	830,000
Maid .....	40,000
Poldice .....	200,000
West Clifford United, (late Ting Tang) .....	50,000

## CAMBORNE VEAN,

in Camborne, Cornwall, in 4,600 shares. *Pursers*, Messrs. R. H. Pike and Son, Camborne. *Manager*, Captain William Bawden, Camborne. *Landowner*, Messrs. C. A. Reynolds, Trevenson, Pool, half of minerals; other half, Mr. Gregor. Dues, 1-20th. Depth of adit, 40 fathoms. Depth under it, 264 fathoms. Pumping-engine, 60-inch. Winding-engine, 22-inch. Crushing-engine, 13-inch. 85 men, 22 females, and 30 boys employed. Rocks, granite, slate, and large elvan course.

## MINERALS SOLD IN 1864.

	Tons cwt. qrs. lbs.						£	s.	d.
Black tin ...	22	4	2	11	...	for	1,445	9	0
Tin stuff ...	87	0	0	0	...	„	222	17	10
							<hr/> £1,668 6 10 <hr/>		

Wheal Francis, which was formerly connected with Camborne Vean, is now detached and ungranted. This mine has been at work upwards of 300 years, and has given large profits at times. On the whole it has been profitable; but it has been losing for the last 15 years: the Company are hoping for better days.

## EAST WHEAL BULLER,

in Gwennap, Cornwall, lying contiguous to Wheal Buller, is in 2,000 shares. *Purser and Manager*, Captain Thomas Richards, Bank House, Redruth. *Landowners*, Heirs of Mr. Beauchamp, and others. Dues, 1-18th. Depth of adit, 20 fathoms. Depth below, 1 fathom. Engine-shaft now being sunk. Pumping-engine, not quite finished, 50-inch. Winding-engine, 10-inch, not quite finished. Rocks, granite and slate.

The present operations, commenced 12 months ago, are on a new part of the Company's sett, northward of their first workings, which are abandoned. It is a portion of what was called Wheal Beauchamp about 60 years ago, and has the Wheal Buller Lodes, which were very productive, near to the western extremity of this sett.

## PENNANCE,

in Gwennap, Cornwall. *Pursers*, Messrs. Williams, Scorrier. *Manager*, Captain John Richards, Trefula, near St. Day. *Landowners*, Messrs. Clinton, Buller, and others. Adit 75 fathoms deep (the Gwennap adit). No workings under. 3 men and 3 boys employed. No machinery, except a whim. No returns for 1864. Rock, granite.

They have been driving the adit about 30 years regularly, on the lode which crosses Tingtang mine, but have met with very little metallic mineral. This is a remarkable instance of perseverance in mining on a small scale. The present adit end is not far from Wheal Beauchamp.

## EAST WHEAL BASSET,

in Redruth, Cornwall, in 512 shares. *Purser*, Mr. F. W. Dabb, Redruth. *Manager*, Captain William Nancarrow, Redruth. *Landowner*, J. W. Buller, Esq. Dues, 1-16th. Rocks, clay-slate, granite, and elvan. Depth of adit, 21½ fathoms. Depth below, 120 fathoms. Pumping-engine, 60-inch. Winding and crushing engine, 24 inch.

## MINERALS SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.			£	s.	d.
Copper ore ...	1,123	0	0	0	...	for ...	8,498	8	0
Tin stuff ...					...	„ ...	2,609	0	0
							£11,107	8	0

This mine was began in February, 1851. The calls were £29 10s. per share; since then the Company have received in dividends nearly £65,000. They received in 1864, £6,144. The mine stands north of Copper Hill, and east of North Basset.

## SOUTH DOLCOATH &amp; CARNARTHEN CONSOLS,

in Illogan, Cornwall, in 6,000 shares. *Secretary*, Mr. W. A. Buckley, London. *Manager*, Captain William Roberts, Pool. *Landowner*, Sir R. R. Vyvyan, Bart. Dues, 1-18th. Depth of adit, 10 fathoms. Depth under it, 80 fathoms. Rock, granite. Pumping-engine, 50-inch cylinder. 46 men, 5 females, and 3 boys employed.

## MINERAL SOLD IN 1864.

	Tons				£	s.	d.
Copper ore ...	118	...	for	...	1,310	0	0

## CLYJAH AND WENTWORTH,

in Redruth, Cornwall, in 1,024 shares, about 200 of which have been relinquished. *Manager*, Mr. F. Pryor, Redruth. *Pursers*, Messrs. R. H. Pike and Son, Camborne. *Landowner*, J. W. Buller, Esq. Dues, 1-18th, reduced to 1-30th. Depth of adit, 20 fathoms. Depth under it, 94 fathoms. Rock, clay-slate (over granite). Pumping-engine, 54-inch. Winding-engine, 18-inch. 42 men, 2 females, and 2 boys employed.

## MINERAL SOLD IN 1864.

£      s.      d.  
Tin stuff, for the sum of 3,537 12 9

The present low price of tin causes a loss on the working of about £100 per month. The present Company began work about 15 years ago, but has not been successful. It is probable that the best, the northern part of the mine, remains unwrought. Perhaps they will direct their attention to that part, to re-imburse their expenditure in the other part. The Company have shown a praiseworthy perseverance.

## EAST CHIVERTON,

in Perranzabuloe, Cornwall, in 2,000 shares. *Purser*, Mr. Thomas Richards, Redruth. *Secretary*, Mr. Rackfort, 4 Queen Street Place, London. *Manager*, Captain James Juliff, Truro. *Landowner*, John Thomas Henry Peter, Esq., Chiverton. Dues, 1-15th. Rock, clay-slate. Depth of mine, 55 fathoms; no adit. Pumping-engine, 36-inch. 20 men, 1 female, and 1 boy employed. No returns in 1864.

This mine has Chiverton and West Chiverton lodes. They commenced operations in 1861, but as they had to open the mine, all the works hitherto may be regarded as preliminary. Success is an event probable.

## WHEAL FRIENDLY,

in St. Agnes, Cornwall. *Purser*, Mr. Henry Borrow, Truro. *Manager*, Captain James Evans, Nance, Illogan. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of mine, 20 fathoms under adit, which is 60 fathoms deep. 20 men, 8 females, and 3 boys employed. No steam power. There are 3 water stamping-mills, lifting 15 heads.

Like Trevaunance, which it adjoins, this mine is not worked under adit, which is as deep as many mines where steam pumping power is used. 60 fathom backs will give work for a long period; the Company have already worked many years.



## TREVAUNANCE,

in St. Agnes, Cornwall. *Purser*, Mr. Josh. Newton, Castle House, St. Agnes. *Manager*, Captain James Evans, of Nance, Illogan. The rock is clay-slate. 12 men employed. Depth of mine 60 fathoms (adit). Mr. Enys is the lord and sole owner of the mine, which can hardly be said to be an adventure, inasmuch as Mr. Enys and his predecessors have been reaping a profit for several generations. The mine is worked at and above adit only, and that on tribute. It has been at work from time immemorial. The profit has been upwards of £100,000. It is contiguous to Polberro Consols.

## WENTWORTH CONSOLS,

in Perranzabuloe, Cornwall, in 3,000 shares. *Purser*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain James Juliff, Truro. *Land-owners*, same as West Chiverton at the east, viz., Messrs. Peter, Ley, Geach, and others. Dues, 1-15th. Depth of adit, 14 fathoms. Depth under it, 30 fathoms. Pumping-engine, 60-inch. Rock, clay-slate. 28 men, 1 female, and 3 boys employed. No returns yet. The Company commenced in 1855 in "virgin" ground; but little was done before last year, when the engine was erected, and a greater energy applied to the work. The position and prospects of the mine warrant hopes of success.

## MINERAL BOTTOM,

in Perranzabuloe, Cornwall, in 3,000 shares. *Purser*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain James Juliff, Truro. *Landowner*, J. T. H. Peter, Esq. Dues, 1-18th. Depth of mine, 30 fathoms; no adit. Pumping-engine, 72-inch. 26 men and 3 boys employed. Rock, clay-slate.

The present Company commenced in 1864, too recently to try the resources of the mine, or to send any mineral to market. It adjoins West Chiverton at the north. There are several known lodes of a very promising character in the sett.

## CHIVERTON MOOR,

(called by a former Company "Great Callestock Moor") is situated in Perranzabuloe, Cornwall. Shares, 3,000. *Purser*, Mr. Richard Clogg, Liskeard. *Manager*, Captain James Juliff, Truro. *Landowners*, Messrs. Paul Clark, William Hodge, and Ventongimps. Dues, 1-18th. Depth of mine, 30 fathoms; no adit. Pumping-engine, 70-inch. Rock, clay-slate.

Working commenced so recently as November, 1863, so that there has not been time to test the lodes. The mine has been cleared nearly to the bottom of the old workings, so that they will be able shortly to sink the engine-shaft. The prospects are very good. The situation of the sett is westward of Wentworth Consols, which it adjoins.

### POLBREEN,

in St. Agnes, Cornwall, in 512 shares. *Purser*, Mr. John P. Bennetts, Falmouth. *Manager*, Captain John Hancock, St. Agnes. *Accountant*, Mr. Ninnis, St. Agnes. *Mineral Owners*, Duke of Cornwall and J. S. Enys, Esq. Adit, 30 fathoms; bottom of mine 52 fathoms under adit. Pumping-engine, 34-inch. Stamping-engine, 13-inch. Rock, clay-slate. 10 men, 2 females, and 10 boys employed.

The works are at a low scale, and the loss is about £50 per month.

### WEST WHEAL KITTY,

in St. Agnes, Cornwall, in 5,000 shares. *Purser*, Mr. Almond E. Paull, Camborne. *Manager*, Captain J. Vivian, Camborne. *Landowners*, Lord Falmouth, J. S. Enys, Esq., and others. Dues, 1-18th. Clay-slate formation. 12 men and 3 females employed. No steam machinery. Depth of adit, 50 fathoms; depth under, 30 fathoms. All the present operations are above adit.

The present Company set to work about two years ago, in what was previously called "Wheal Rock," and last year they sold tin-stuff of the value of £2701 2s. 6d. Having a deep adit, they can do a great deal of work without an engine, but to work the ground fairly, and with a fair chance of success, the mine should be drained and worked downwards.

### PENHALLS,

in St. Agnes, Cornwall, in 5,000 shares. *Secretary*, Mr. E. King, London. *Purser*, Mr. Joseph Newton, Castle House, St. Agnes. *Manager*, Captain William Higgins, Peterville, St. Agnes. *Landowners*, Duke of Buckingham, and Messrs. Davey and St. Aubyn. Dues, 1-22nd. Depth of adit, 40 fathoms; depth under adit, 60 fathoms. Pumping-engine, 50-inch. Stamping-engine, 36-inch. Rock, clay-slate.

The mine is very ancient, beyond all record, but the present Company was formed in 1858.

## POLBERRO (formerly POLBERON) CONSOLS,

in St. Agnes, Cornwall, in 1,772 shares. *Purser*, Mr. J. P. Bennetts, Falmouth. *Manager*, Captain John Hancock, St. Agnes. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of adit, 60 fathoms; depth below it, 50 fathoms. Pumping-engine, 60-inch. Stamping-engine, 36-inch. Winding-engines, 22-inch and 16-inch respectively. Rock, clay-slate.

This mine has been worked from time immemorial. It has long been profitable, and is likely to continue so. The tin is disseminated through the rock in innumerable small veins, so that the workings are quite peculiar, rendering a perfect plan and section a most difficult undertaking. I have heard it alleged as an impossibility to make a plan of Polberro mine.

## WHEAL KITTY,

in St. Agnes, Cornwall, in 4,295 shares. *Secretary*, Mr. E. King, London. *Local Purser*s, Messrs. R. H. Pike and Son, Camborne. *Manager*, Captain William Teauge, Tincroft Mine. *Landowners*, Duke of Buckingham ( $\frac{1}{2}$ ), Messrs. Davey (17-60), and the Rev. H. M. St. Aubyn (13-60). Dues, 1-22nd. Depth of adit, 45 fathoms, depth under it, 110 fathoms. Pumping-engine, 50-inch. Stamping-engine, 30-inch. Winding-engine, 24-inch. Rock, clay-slate.

Workings re-commenced in September, 1852. There has been a profit, and dividends are likely to be continued. The whole credit of making the mine pay cost and dividends is due to Captain Richard Pryor, of Redruth, who found the mine miserably poor (and doomed to stop), and left it paying dividends.

## WHEAL CHIVERTON,

in Perranzabuloe, Cornwall, in 3,000 shares. *Purser*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain James Juliff, Truro. *Landowner*, J. T. H. Peter, Esq. Dues, 1-18th. Depth of adit, 12 fathoms; depth below, 86 fathoms, but the mine is clear only to the 60 fathom level. Pumping-engine, 60-inch. Winding and capstan-engine, 22-inch. Rock, clay-slate. 30 men, 1 female, and 4 boys employed. No returns in 1864.

This mine is the central part of what was about 20 years ago called "Cornubian Mines," which included East and West Chiverton; but at that time the lodes had not been worked in either of those mines; the operations were confined to the ground close to Chiverton House. The present Company, which was formed in 1862, expected to find the engine-shaft clear, or

nearly so, to the bottom, but instead of that they found it fallen in; a circumstance which has delayed the development of the lodes in the bottom. No doubt is entertained of success, because the rich lodes of West Chiverton are operated on near the western boundary of this mine. The discoveries at West Chiverton have had the effect of setting to work many mines in the neighbourhood, as was the case 20 years ago in the East Wheal Rose district.

### SOUTH ST. GEORGE,

in Perranzabuloe, Cornwall, a lead mine, has been idle about 15 years. A great quantity of blende could be raised here from the 10 and 20 fathom levels; probably enough to pay the cost while searching after lead.

This ground geologically speaking is beyond the influence of the granite for producing copper, but in an excellent situation for the generation of lead. According to all mining rules, if this property was properly opened it ought to form one of those great Cornish Lead mines that have given so much wealth to the proprietors, such as at East Wheal Rose, West Chiverton, &c.

### EAST BUDNICK AND MOUNT MINES

(late Wheal Thomas,) in Perranzabuloe, Cornwall. Mr. Croker, Plymouth, was *Purser*. Captain W. H. Reynolds, Redruth, was *Manager*. *Landowner*, J. J. H. Peter, Esq. Dues, 1-16th. Adit, 6 fathoms. Depth of mine under adit, 36 fathoms. Operations suspended in 1863. The rock is clay-slate. The lodes were worked for lead.

### WHEAL LOUISA,

in Redruth, stopped about the end of 1863. An engine was erected, and worked a short time, but insufficiently to try the lodes.

### WHEAL MEXICO,

in Perranzabuloe. Idle. Lead lodes in the sett. The mine stopped many years ago.

### WHEAL HOPE,

in Perranzabuloe, Cornwall, in 4,096 shares. *Purser*, Mr. C Wescomb, Exeter. *Manager*, Captain John Nicholls, Camborne.

*Resident Agent*, Captain Daniel Reece. *Mineral Owners*, Duke of Cornwall and J. T. H. Peter, Esq. Adit, 12 fathoms deep. Depth below, 85 fathoms. Rock, clay-slate. Pumping-engine, 42-inch. Winding and crushing engine, 22-inch (double). 61 men, 12 females, and 2 boys employed. The workings commenced in April, 1861, under the management of Captain W. H. Reynolds, of Redruth, who recently resigned.

### NORTH CHIVERTON,

in Perranzabuloe, Cornwall, in 6,000 shares. *Purser*, Mr. Wm. Watson, Plymouth. *Manager*, Captain Wm. Hancock, East Wheal Falmouth, near Truro. *Mineral Owners*, Dean and Chapter of Exeter. Dues, 1-18th. Adit, 27 fathoms deep. Depth below, 10 fathoms. Pumping-engine, 50-inch. 39 men, 6 females, and 16 boys employed. Rock, clay-slate. The engine was set to work, 9 July, 1864. The prospects are good.

### NEW CHIVERTON,

in Perranzabuloe, Cornwall. *Purser*, Mr. Wm. Page Cardozo, Camborne. *Manager*, Captain James Juliff, Truro. *Landowner*, Lord Falmouth. Adit, 3 fathoms. Depth below, 50 fathoms. Pumping-engine, 40-inch. Rock, clay-slate. Operations commenced in 1863. 30 men, 1 female, and 4 boys at work.

### TRESKERBY,

in Gwennap, Cornwall. *Purser*, Mr. Tobias Harry Tilly, Falmouth. *Manager*, Captain John Davey, junr., Gwennap. *Landowner*, Miles Charles Seton, Esq. Dues, 1-16th. Adit, 8 fathoms deep; bottom, 50 fathoms below. Rocks, granite and slate. Pumping-engine, 36-inch. Persons employed about 20 in number. No returns since the present Company commenced, about 5 years ago. The operations are southward of those of the old Company, who stopped in 1828, and who realised large profits from the old Treskerby mine. The most fortunate of the adventurers were the Messrs. Williams, of Scorrier, who held a large interest in the Company. The present Company have been disappointed so far.

### WEST TREMAYNE

(late North Wheal Gilbert), in the Parish of St. Erth, Cornwall, in 6,000 shares. *Secretary*, Mr. Jehu Hitchins, St. Michael's

Alley, Cornhill. *Landowners*, Duke of Leeds, and Hon. Mrs. Gilbert. Dues, 1-18th. Depth of mine at adit, 20 fathoms; under adit, 20 fathoms. Rock, clay-slate, with a large elvan course. The late Company abandoned the mine about 8 years ago. A new Company is now being formed, if not already completed, for making a more extensive trial of the lodes than was done by the late Company. The lodes are five in number. There is a 24-inch engine on the mine. The *Manager* is Captain W. W. Martin, Wheal Basset, Redruth. The situation justifies anticipations of success.

### PRINCE ALBERT CONSOLS,

in the parishes of Perranzabuloe and St. Agnes, Cornwall, in 5,000 shares. *Purser and Manager*, Captain Richard Davies, St. Agnes. *Mineral Owners*, Duke of Cornwall and Sir R. R. Vyvyan, Bart. Dues, 1-18th. Rock, clay-slate only. 10 men employed. Adit, 3 fathoms deep. Bottom of mine, 30 fathoms below adit. Pumping and stamping engine (rotary) 24-inch.

The workings commenced in 1851, and continued 5 years; they were resumed in 1862. There were no returns in 1864, but great hopes are entertained that the lode, towards which they are now driving, will yield mineral: that will soon be ascertained. The mine is situated about a mile southward of Perranporth, where Great St. George and Wheal Leisure are situated,

### SOUTH CHIVERTON,

in St. Allen, Cornwall, in 3,000 shares. *Purser*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain Rd. Nancarrow, Perranwell, Perranzabuloe. *Landowner*, J. T. H. Peter, Esq. Dues, 1-18th. Rock, clay-slate. Pumping-engine, 60-inch. Depth of adit, 9 fathoms; bottom of mine, 7 fathoms below. 25 men, 1 female, and 4 boys employed.

No returns. The Company commenced in virgin ground in 1864. There are 3 lodes in the sett, and the prospects are very good for lead. The mine stands about  $1\frac{1}{2}$  mile south of West Chiverton.

### WHEAL HARTLEY,

in Gwinear, Cornwall, in 5,350 shares. *Purser*, Mr. A. E. Paull, Camborne. *Manager*, Captain Josh. Vivian, North Reskear. *Landowners*, Mrs. Hartley and Mr. Edward Langon's executors. Dues, 1-18th. Adit, 25 fathoms deep. Bottom of mine, 34 fathoms under adit. 25 men, 4 females, and 6 boys employed.

Rocks, clay-slate, greenstone, and elvan. Pumping-engine, 40-inch.

Operations commenced in 1860. They are now working with more vigour, and with good prospects of success.

### WHEAL HARRIET,

in Camborne, Cornwall, in 5,120 shares. *Secretary*, Mr. E. King, Austin Friars, London. *Purser*, Messrs. R. H. Pike and Son, Camborne. *Manager*, Captain Stephen Williams. *Landowner*, J. F. Basset, Esq. Depth of adit, 40 fathoms. Depth under adit, 140 fathoms. Pumping-engine, 24-inch (combined). Winding-enging, 18-inch.

#### MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.		£	s.	d.
Copper ore	37	0	0	0	(computed) for ...	197	13	4
Tin stuff					„ ...	1,133	13	2
						<hr/> £1,331 6 6 <hr/>		

This mine re-commenced working about 10 years ago, and their prospects are now improving.

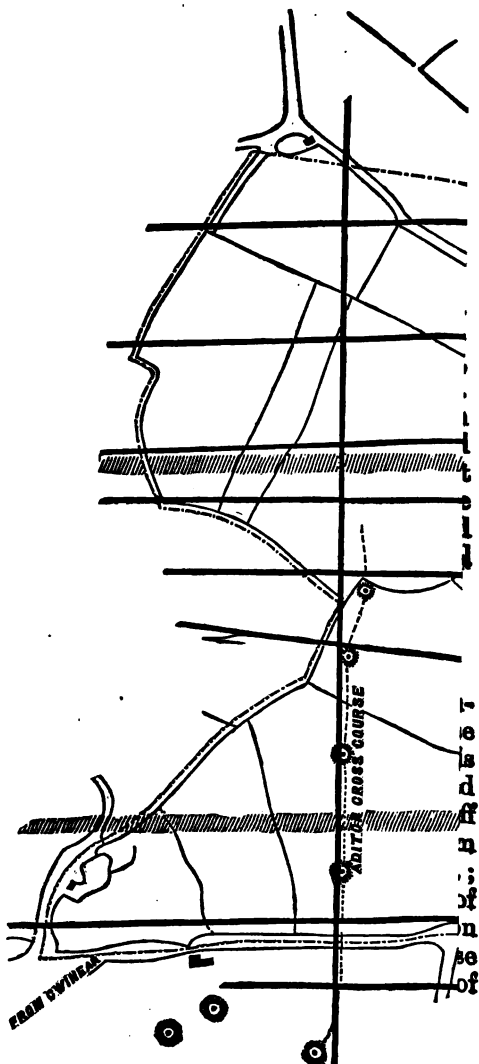
### SOUTH WHEAL LEISURE,

(late Truro Consols), in Perranzabuloe, Cornwall, in 5,671 shares. *Purser and Secretary*, Mr. Jarvis, London. *Manager*, Captain John Rabey, Scorrier, Cornwall. *Landowner*, Sir R. R. Vyvyan, Bart. Depth of adit, 20 fathoms; depth under adit, 10 fathoms. Pumping-engine, 33-inch. The present Company commenced in 1862, but the working has not been continuous, so that little development only has been made. The former party also did little. There has been no sale of mineral. This mine is situated about a mile south of Wheal Leisure, Perranporth, in a clay-slate formation. The prospects are said to be fair. More energy is required in the working.

### EAST POLBERO,

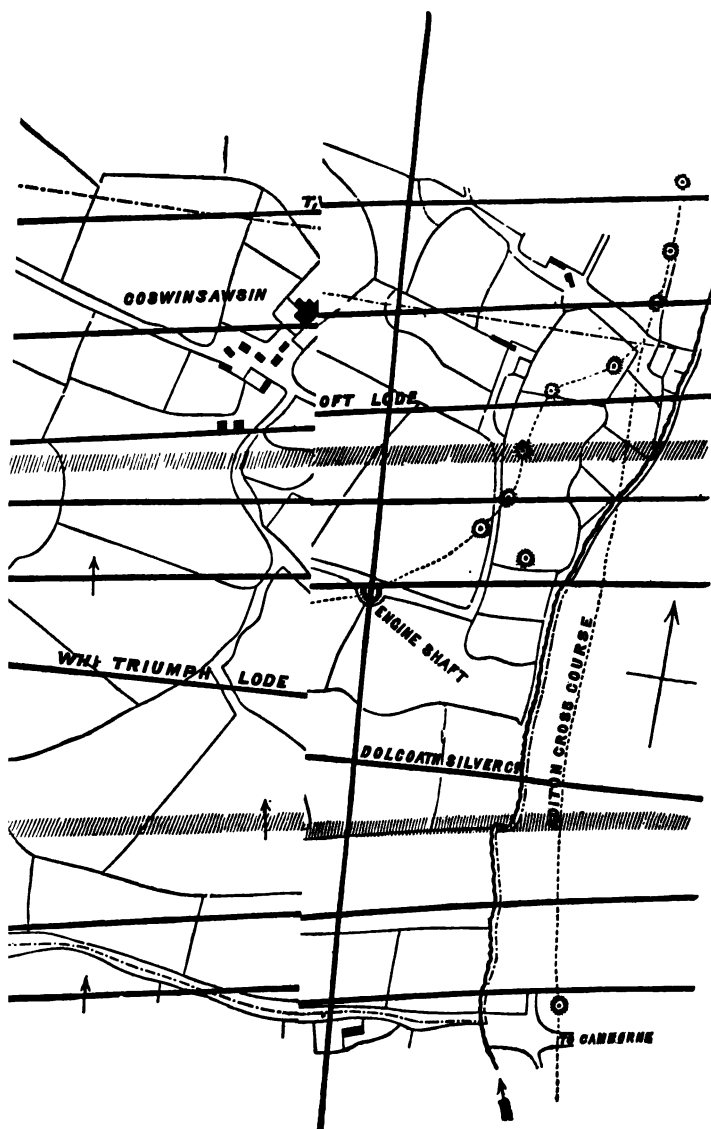
(formerly Wheal Betsy), in Saint Agnes, Cornwall. 8,000 shares. *Purser*, Mr. John Clay. *Local Purser and Manager*, Captain Arthur Gripe, St. Agnes. *Mineral Owner*, Duke of Cornwall. Dues, 1-20th. Rock, clay-slate. Pumping-engine, 36-inch. 3 water-stamping mills, lifting 9 heads. Depth of adit, 40

**SURFACE PLAN C**





# WEST DOLCOATH, CORNWALL.



fathoms; depth under adit, 20 fathoms. 32 men and 4 females employed.

Black Tin sold in 1864, for £412 6s. 7d.

This mine is very old. It was worked in another part of the sett by Messrs. Carne and Company in 1836, and several subsequent years (but it was worked before then). It was afterwards abandoned. In 1849 another Company took it in hand. The present Company have held it about two years only. It is a tin mine situate in Trevellas estate, about one-and-a-half miles east of St. Agnes village. The prospects are fair.

### EAST WHEAL SETON,

in Illogan, Cornwall, in 5,610 shares. *Purser*, Mr. Almond E. Paull, Camborne. *Manager*, Captain Joseph Vivian, North Roskear, Camborne. *Landowners*, Sir R. R. Vyvyan, Bart., J. F. Basset, Esq., and W. B. Tyringham, Esq. Dues, 1-18th. Rocks, clay-slate and elvan. 8 men employed. Depth of mine, adit level, 18 fathoms. The workings commenced 3 years ago. This mine was a part of the late East Wheal Crofty, and lies on the northern side of the part of that mine which is now called "North Crofty." The Company are driving to test the lodes at the adit level before the erection of any steam machinery. There have been no returns. The position of the mine is considered first-rate, having Wheal Seton at the western side, and East Pool and North Pool at the east.

### WEST DOLCOATH,

This mine, which is idle, is situated on the confines of the Camborne and Gwinear district, so well known for its extensive produce of copper, tin, and silver ores as scarcely to require comment. It is about 2 miles to the west of, and in a direct line with the old and celebrated Dolcoath Mine, which in half a century has sent off £3,000,000 worth of metallic ores to market. The district, from 1846 to 1858, yielded profits to the extent of £1,504,685 10s.; but as far as the records go, altogether the enormous dividends of £3,004,126, upon an outlay of £395,364. From a consideration of these figures, one may imagine something of the wealth of these regions, and the immense contribution of the mineral kingdom of Great Britain to the wealth of these rich islands.

### CARN CAMBORNE,

in Camborne, Cornwall, in 6,000 shares. *Secretary*, Mr. John Harding, Salisbury. *Purser and Manager*, Captain James Sec-

combe, Menheniot. *Landowners*, Sir R. R. Vyvyan, Bart., and J. F. Basset, Esq. Dues, 1-15th. Depth of adit, 25 fathoms; depth below adit, 46 fathoms, and now sinking. Steam engine—pumping, winding, and crushing, 22-inch. Persons employed, 64 men, 15 females, and 4 boys. Rocks, granite and slate, with elvan course.

#### MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.					£	s.	d.
Copper ore ...	190	16	1	0	... for ...	814	6	4

The late Captain Andrew Vivian broke the surface about 50 years ago. The present Company took possession about 3 years ago. The stack of the engine is built to stand as an ornament of the hill, and a beacon for mariners; its height is about 70 feet, square, and castellated. The engine-house is also castellated; this, also, is destined to stand after the abandonment of the mine. Both most substantially built. The returns have been gradually increasing, from which I infer that the mine will take its stand amongst the dividend mines at no distant period.

#### WEST CONDURROW,

in Camborne, Cornwall, in 5,025 shares. *Purser*, Mr. A. E. Paull, Camborne. *Manager*, Captain Edwin Hoskin, Pool. *Lords*, Mr. Pendarves' trustees. Dues, 1-20th. Depth of mine, 36 fathoms under adit, which is 38 fathoms deep. Rocks, granite, slate, and elvan. 30 men, 4 females, and 6 boys employed. Pumping-engine, 40-inch.

The operations commenced in 1857, but the returns have fallen short of the expenditure; however hopes are entertained that a deeper trial will result in a better condition of affairs. The situation of the sett, on the junction of the granite and slate, and in a most metalliferous district, holds out encouragement to patient perseverance. Perseverance met with its reward in West Seton, and other mines which were poor for a longer period than this mine has worked.

#### WHEAL UNION,

in the parish of Redruth, Cornwall, in 6,000 shares. *Purser*, Mr. George Lightley, Redruth. *Secretary*, Mr. Buckley, London. *Manager*, Captain Thomas Glanville, Redruth. *Landowners*, J. W. Buller, T. J. Agar Robartes, and William Williams, Esqrs. Depth of adit, 20 fathoms; depth under adit, 95 fathoms. Rocks, clay-slate and 3 elvan-courses. 63 men, 2 females, and 3 boys

employed. Pumping-engine, 50-inch. Winding-engine, 22-inch.

Operations were commenced by the present Company about 9 years ago, but the returns have been small; however, experienced agents, who have inspected the mine, agree in saying that if it be properly opened, no doubt need be entertained of good results following. It adjoins East Carnbrea. Few mines in that district give much returns at shallow levels.

### ILLOGAN,

in the parish of Illogan, Cornwall, in 6,000 shares. *Purser and Manager*, Captain William Teague, Tincroft Mine. *Landowners*, J. F. Basset and T. J. A. Robartes, Esqrs. Adit, 27 fathoms deep; bottom of mine, 70 fathoms under adit. Rocks, granite and elvan. 26 men and 4 boys employed. Pumping-engine, 40-inch cylinder. No other steam machinery.

This mine was, a few years ago, a part of Tincroft sett, and was then called Wheal Providence. About 3 years ago the present Company took the mine in hand, and the prospects are such as to warrant a much more extensive trial, although hitherto there has been no sale of mineral; a spirited perseverance will doubtless meet with its reward. This mine is west of Carnbrea mines, and has some of its lodes; it is south of Tincroft.

### SOUTH CONDURROW,

in Camborne, Cornwall, divided into 6,000 shares. *Purser*, Mr. Joseph Vivian, Jun. *Secretary*, Mr. Edward King, Austinfriars. *Manager*, Captain James Vivian, North Roskear Mine. *Landowners*, Mr. Pendarves' trustees. Dues, 1-18th. Adit, 23 fathoms; depth under adit, in present workings, 30 fathoms. Rocks, granite and slate. Pumping-engine, 45-inch. 60 men, 8 females, and 30 boys employed.

The present Company began to work about 15 years ago, and have shifted their base of operations twice. After all those years of adversity their prospects are fast brightening, and the mine is evidently coming into a dividend condition. The present works are near the southern side of the sett, not far from Wheal Grenville. The old burrows, which are extensive in the sett, give evidence of considerable labour of the ancients in search of mineral.

### WENDRON UNITED,

in Wendron, Cornwall, in 960 shares. *Pursers*, Messrs. R. H. Pike and Son. *Manager*, Captain William Pascoe, Camborne.

*Landowners*, Duke of Cornwall, Mr. John Perry, Mrs. Leggo, and Mrs. William Treloar. Dues, 1-18th. Depth of mine, 50 fathoms; no adit. Rock, decomposed granite. 26-inch rotary engine drew water and stamped the tin.

Black tin sold in 1864, realised £1,450.

The works commenced about 9 years ago, and were abandoned a few months since, but the machinery still remains *in situ*. The district is good for tin.

### COPPER HILL,

in Redruth, Cornwall, in 1,024 shares. *Pursers*, Messrs. S. and R. Davey, Redruth. *Manager*, Captain John Davey, jun., Gwennap. *Landowner*, J. W. Buller, Esq. Dues, 1-16th. Depth of mine, 104 fathoms; no adit. Pumping-engine, 40-inch; winding and crushing-engine, 22-inch. Rocks, granite and clay-slate.

#### MINERAL SOLD IN 1864.

	Tons. cwt. qrs. lbs.							£	s.	d.
Black tin	2	2	0	11	...	,,	...	130	9	17

This mine was a part of Wheal Buller until 1847, when it was separated, and called "Copper Hill Mine." The outlay has been about £12 per share, against which they have received in dividend £2 7s. 6d. per share. The present workings are close to the extreme boundary of Wheal Basset, which is well known to be a good mine. I have no doubt that at deeper levels Copper Hill will become a much better mine than it is at present.

### STRAY PARK,

in the parish of Camborne, in 920 shares. *Purser*, Mr. Elias Dunsterville, Redruth. *Manager*, Captain Charles Thomas Pin. Rocks, killas to the 210 level, granite below. *Landowner*, John F. Basset, Esq. Dues on copper, 1-20th. Dues on tin, 1-24th. Depth to adit, 30 fathoms; under adit, 245 fathoms. Pumping-engine, 64-inch. Stamping-engine, 30-inch. Winding-engine, 22-inch.

This mine, like Dolcoath, has been worked from time immemorial. In ancient times it yielded very large profits, but for some years the balance has been against the adventurers. Hopes are, however, entertained that ere long the balance will change sides.

### WEST CLIFFORD (LIMITED),

in Gwennap, Cornwall, in 6,000 shares. *Secretary*, Mr. Cooper Smith, London. *Manager*, Captain Richard Pryor, Redruth.

*Landowners*, Lord Clinton, Lord Mount Edgcumbe, and Beauchamp's representatives. Dues, 1-30th. 45 men, 1 female, and 5 boys employed. Depth of adit, 30 fathoms. Depth under, 140 fathoms. Pumping-engine, 80-inch. Winding and capstan engine, 26-inch. Rocks, clay-slate and granite.

This mine was worked by Messrs. Williams and Co., for many years, until about the year 1840; and from it they derived considerable profit. It was then called "Tingtang Mine." In 1844 or 1845, the late Captain William Martin, formerly manager of Tresavean, formed a Company for working it under the name of "Tingtang Consols," but they did not work more than about two years, for want of capital.

The present Company commenced in April, 1864. The supply of machinery was contracted for by Mr. Richard Michell, of Gwennap, who executed his contract with creditable despatch. No doubt exists as to the success of the working, if carried out efficiently; but the capital already subscribed is not sufficient, I fear, to bring the mine into a paying state.

### WHEAL LOVELL,

in the parish of Wendron, Cornwall. *Purser*, Thomas Phillips Tyacke, Esq., Helston. *Manager*, Captain Josiah Phillips, on the mine. *Landowners*, Mr. Gwatkin and others. Depth of adit, 30 fathoms; depth under adit, 144 fathoms. Rock, granite. 55 men, 5 females, and 6 boys employed. Pumping-engine, 50-inch. Stamping-engine, 24-inch. Winding-engine, 16-inch.

### CROWAN AND WENDRON,

Tin and Copper Mining Company (Limited), late Releath mine, —in Crowan and Wendron, Cornwall—8,000 shares. *Purser*, Mr. F. Michell, C.E., Redruth. *Agent*, Captain Richard Reynolds, Gwinear. *Landowners*, Sir R. R. Vyvyan, Bart., and Mr. St. Aubyn. Dues, 1-18th. Depth of adit, 6 fathoms; depth under adit, 49 fathoms. Rock, granite. 26 men and 2 boys employed. Pumping-engine, 40-inch. This mine was worked 2 or 3 years ago under the name of Releath Mine, in great poverty, but some say not fairly. The present Company took it in hand in 1864. No returns since. It is a tin mine, whose resources have not been developed.

### NEW WENDRON,

in the parish of Wendron, Cornwall. *Late Purser*, Mr. Pascoe,

Grenfell Hill, Helston. *Late Manager*, Captain Richard Gluyas, Trenear, Wendron, near Helston. Abandoned.

### WHEAL VYVYAN,

in the parish of Constantine, Cornwall, a tin and copper mine, near the Church village, ceased to work about 12 months ago. Captain John Nicholls was the *Manager*. The *Landowner* is Sir R. R. Vyvyan, Bart. A great deal of mineral has been raised in this sett, but insufficient to meet the expenditure. The loss, however, has been light.

### TREVENEN AND TREMENHEERE,

in Wendron, Cornwall, in 5,600 shares. *Purser*, Mr. John Ware, Exeter. *Manager*, Captain John Medlen, at the mine. *Accountant*, Mr. Wright. *Landowners*, T. J. Agar Robartes, and John Jope Rogers, Esqrs. Dues, 1-24th. Depth of adit, 16 fathoms; depth under adit, 172 fathoms (sinking under that level). Rock, granite. 50 men, 14 females, and 60 boys employed. Pumping-engine, 50-inch. Stamping-engine, 40-inch. Winding-engine, 22-inch.

#### MINERAL SOLD IN 1864.

	Tons. cwt. qrs. lbs.						£	s.	d.
Black tin ...	107	9	1	25	for ...	...	7,017	3	11

Works re-commenced in 1843. The returns do not cover the cost. Trevenen was a rich mine 50 years ago. It stopped in 1815 or 1816 by the old Company. The district is a capital one for tin, which is almost the exclusive mineral product.

### TRUMPET UNITED,

(formerly called Wheal Ann), in Wendron, Cornwall. *Purser*, Mr. John Watson, London, *Manager*, Captain George Odgers, Wheal Grenville, near Camborne. *Landowners*, William Michell, Esq., and others. Depth of adit, 13 fathoms; depth under it, 60 fathoms. Rock, granite. Pumping-engine, 30-inch (idle). No persons employed, but the late resident agent lives on the mine still. This mine had a short working by the present Company; they suspended in January, 1865, but the materials are still *in situ*. From first to last this mine has yielded immense quantities of tin ores, which are far from being exhausted.

## GODOLPHIN,

in Breage, Cornwall (being a small portion of the ground of the old rich mine of that name) is almost idle: there being only 2 men at work. There is no machinery on the ground. The old mine during the first working gave about £90,000 profit.

## SOUTH CRENVER,

in Crowan, Cornwall, is idle, so far as machinery is concerned. There are 3 or 4 men driving at adit level. Materials sold. This mine has disappointed the expectations of the adventurers.

## WHEEL GRYLLS,

(late Wheel Wellington), in the parishes of St. Hilary and Breage, Cornwall, in 1,024 shares. *Purser*, Mr. William Watson, Plymouth. *Secretary*, Mr. J. H. Murchison, 8 Austin Friars, London. *Manager*, Captain Edward Rogers, Perranuthnoe, near Marazion. *Landowners*, Messrs. Buller, St. Aubyn, Grylls, and others. Dues, 1-18th. Depth of adit, 40 fathoms; depth under it, 40 fathoms. Rock, clay-slate. 116 men, 49 females, and 33 boys (total 198) employed. Pumping-engine, 40-inch. Stamping-engine, 32-inch (double) now lifting 32 heads.

## MINERAL SOLD IN 1864.

	Tons. cwt. qrs. lbs.						£	s.	d.
Black tin	...	129	15	2	27	...	for	...	7,624 2 10

This mine has been at work many years, but the present party have held it but a few years. There has been a profit on the whole working; but in 1864 there was none.

## SOUTH ALFRED CONSOLS,

in the parish of Phillack, Cornwall, in 6,000 shares. *Purser or Secretary*, Mr. Beale, 21 Gresham Street, London, E.C. *Manager*, Captain James Barratt, Ventonleage, Hayle. *Landowners*, Messrs. Robartes, Buller, and others. Dues, 1-16th. Depth of adit, 8 fathoms. Depth under it, 20 fathoms. Rock, clay-slate, near elvan courses. 28 men, 2 females, and 1 boy employed. Pumping-engine, 45-inch.

Operations commenced in 1862. In 1864 no mineral was sold. The mine requires to be opened, and the lodes more fully tested, to enable a miner to pronounce a decided opinion on the merits of the speculation. The locality is good.



## PROSPER UNITED,

in the parish of St. Hilary, Cornwall, in 6,000 shares. *Purser*, Mr. C. Wescomb, Exeter. *Manager*, Captain Stephen Lean, Camborne. *Landowners*, Duke of Leeds, Messrs. F. Hill, Polwhele, and another. Dues, 1-20th. Depth of adit, 12 fathoms. Depth below it, 90 fathoms. Rocks, clay-slate and 2 elvan courses. Pumping-engines, 70, 70, and 60-inch. Stamping-engine, 24½-inch. Winding and capstan engines, 20 and 20-inch. 325 men, 75 females, and 41 boys (total 441) employed.

## MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	3,658	5	2	0	...	for	13,423	19	0
Tin	...	120	9	3	20	...	7,202	8	4
Arsenic	...	189	2	1	0	...	137	1	0
Lead ore	...	10	19	2	0	...	126	15	7
							<hr/> £20,890 3 11 <hr/>		

Works resumed in or about 1860. The outlay has been very heavy, and the present returns, considerable as they are, do not equal the expenditure. The water charge is heavy. In greater depth the lodes may be more productive. It is hoped the Company will eventually be rewarded for their perseverance.

## EAST GRYLLS,

(late Greenbury Moor), in the parish of Germoe, Cornwall, in 2,048 shares. *Purser*, Mr. William Watson, Plymouth. *Manager*, Captain Edward Rogers. *Landowners*, Messrs. Buller, St. Aubyn, and others. Dues, 1-18th. Depth of adit, 30 fathoms. Depth under adit, 17 fathoms. Rock, clay-slate. 72 men, 28 females, and 19 boys (total 119) employed on the works. Pumping and stamping engine, 26-inch cylinder.

## MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.			£	s.	d.
Black tin	...	42	18	3	8	...	for	2,442	8 3

Present Company commenced on old workings 3 years ago. The income and expenditure are nearly equal. Most of the outlay has been for machinery. The mine adjoins Wheal Grylls.

## WHEAL CROFTY,

in Illogan, Cornwall, in 6,000 shares. *Purser*, Mr. T. W. Field, Marazion. *Manager*, Captain Henry Skewes, Camborne. *Land-*

*owner*, John Francis Basset, Esq. Depth of adit, 30 fathoms. Depth below, 125 fathoms. 7 men and 1 female on the mine. Pumping-engine, 36-inch (idle). Winding and crushing engine, 24-inch (idle). Rocks, clay-slate and elvan. A small sale of copper ore in 1864.

This mine was separated from South Crofty about 2 years ago, and purchased by Mr. J. E. Square for himself and friends. It is now offered for sale. Works suspended.

### GREAT NORTH TOLGUS,

This valuable mine was suspended about two years ago from the want of agreement amongst the proprietary. It is situate at the north end of a magnetic line passing through the Tolguses and a number of other rich mines. There can be no difference of opinion as to the thoroughly good geological position of the lodes, in fact, they have been found rich in copper ore, and on the Wheal Mary lode, at a few fathoms below the adit level, there is now a rich discovery. The accompanying plan gives a good notion both of the underground working and the surface arrangement of the mine, and there can be but little doubt that after a while the working will be resumed, and just as little that if carried out with skill the Company who may embark their money in this enterprise will be amply compensated for their outlay. Almost every mine in this district has produced fortunes to the shareholders, and it is not likely that this will prove an exception.

### NORTH WHEAL CROFTY,

in Illogan, Cornwall, in 5,610 shares. *Purser*, Mr. A. E. Paull, Camborne. *Manager*, Captain Joseph Vivian, North Roskear mine. *Lords*, Messrs. J. F. Basset, and W. B. Tyringham. Dues, 1-18th. Adit, 20 fathoms. Depth of mine under adit, 190 fathoms. Pumping-engine, 80-inch. Stamping and crushing-engine, 26-inch. Winding-engines, 22 and 24-inch respectively. 100 men, 60 females, and 26 boys employed. Rock, clay-slate. The present working (first under the name of East Wheal Crofty) commenced about 36 years ago, and the profit was about £80,000. Afterwards the scale turned, and the Company have been generally losing a little every month—particularly since the fall in the price of tin. But hopes are entertained that better times await the adventurers.

### NOBLE DALE,

(late new Wheal Vaddon, afterwards New Grylls), in St. Hilary,







## SOUTH CARNBREA,

in the parish of Illogan, Cornwall, in 6,000 shares. *Secretary*, Mr. Buckley, London. *Local Purser*, Mr. Lightley, Redruth. *Manager*, Captain Isaac Richards, Devon Great Consols. *Landowner*, J. F. Basset, Esq. Depth of adit, 20 fathoms; depth below, 108 fathoms. Rocks, granite and clay-slate. 73 men, 25 females, and 35 boys employed, Pumping-engine, 26-inch cylinder. Stamping-engine, 30-inch cylinder (double). Winding-engine, 24-inch cylinder.

Very little was done in this land before Mr. Joseph Lyle (deceased) took it in hand about 17 years ago. For several years little or no mineral was raised, but of late years a considerable quantity of tinstuff has been obtained; but not sufficient mineral has yet been found to meet the current expenses.

## THE THIRD, OR EASTERN CENTRAL DIVISION.

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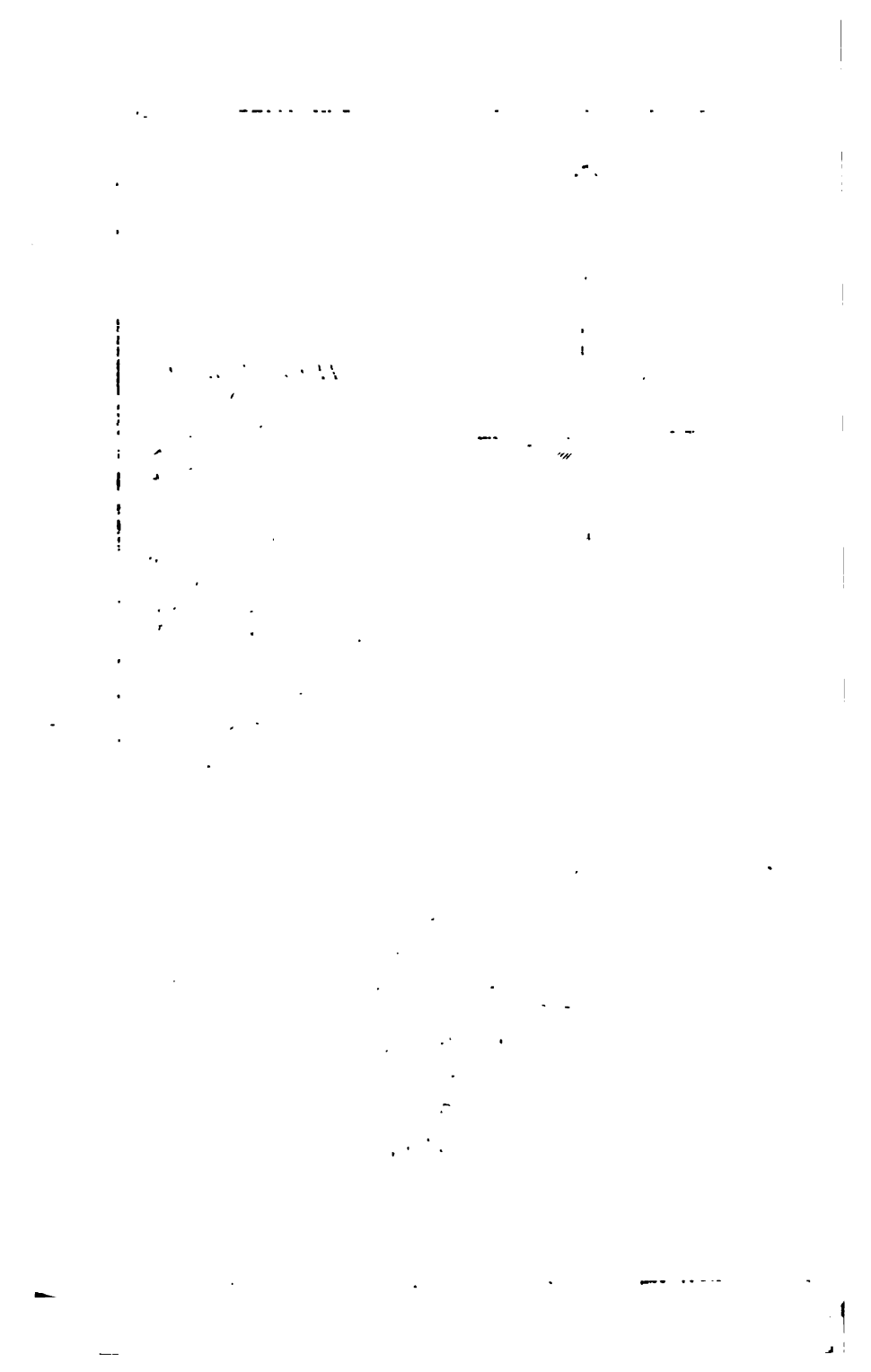
### CHAPTER III.

THE third division of the mining district of Cornwall extends northward from Truro to Crantock, near Cubert, and eastward as far as Lostwithiel. In former times, this was not considered a profitable part of the county for mining, and even within our own time there was a proverb much credited, "that all the mines to the east of Truro Bridge, might be considered as so much rubbish." In looking over the map of the ground, divided as it is into mining and geological departments, it is easy to see that this ground forms an important part of the mining country; the signs of the product of the rock are scattered over the surface, as if indiscriminately, and yet to the mining mind there is a certain order in the distribution, that speaks of regularity and conformity to law.

In the first place, we have the great granitic centre, extending eastward from the Fal to Lostwithiel, and from north to south, from Roche to St. Austell. Surrounding this boss is the clay-slate, striped and blotched with the trap-rocks, the feeders and supporters of the metals. In casting your eye over the ground as represented by the map, you find from north to south, first a belt of lead rock. In this belt at Newlyn was found the celebrated lead mine of East Wheal Rose—a mine that was worked on a north and south lode for upwards of a mile in length, and paid Sir Christopher Hawkins and the Bishop of Exeter upwards of £14,000 a-year in Royalties, and the proprietors (of whom Mr. Abel Lewis Gower, formerly Governor of the Bank of England was one), as much in a single year as £60,000 in profit, and £20,000 in bonuses. It is to such mines that the Davies, our M.P.'s, and the Mitchells are indebted for their fortunes; those who by their wealth are enabled to serve their country in parliament, or add to its fortunes and their own by smelting its metals. Yet there are not a few who would hold up their hands and cry "Beware of the dangers of mining!" I should like to know what mining would come to in this country, if left to the class of wiseacres who are for ever lifting up their voices to decry it and miners, and yet who say dividend mines are a good thing. Do these blockheads know there was a time when East Wheal Rose

**LOGICAL & PARISH MAP**  
*TRICT EXTENDING FROM PADSTOW*





was a progressive mine?—when the Devon Great Consols (*mirabile dictu*) was thought so despairingly of that it was abandoned? It is such mines as these that would be stopped in embryo, if the counsel of these imbeciles prevailed, but, thanks to the manly instinct of the British nation, their idle warnings and abortive prophecies are treated with the contempt they merit. These impracticable ravings of an unpractised race, put forth to catch from the uninitiated the breath of favour, fall to the ground.

The next belt to the eastward, at St. Enodor, shows blende, and further southward lead, and next (coming to the western promontory, so to speak, of the granite) we have the usual association of tin and copper ores; in fact, from this point eastward, the outskirts of the granite in every direction, for 10 miles in length, are marked with mines of tin and copper—and who shall say how many undiscovered mines yet elude our vigilance?—through St. Stephens, St. Mewan, St. Dennis, and the other parishes surrounding this parent rock of the metals. Enough, however, are discovered to encourage the British miner in his researches, and to afford a guarantee that much other valuable metallic ground will be opened in this locality. In this division of the county a new geological feature comes into play, and we find the map marked China clay and China stone. The amount of this beautiful but brittle fabric, now owing its formation and origin to the Cornish granites, is measured by hundreds of tons per annum, which finds its way in every sort of elegance of form and excellence of structure, to every part of the British Kingdom, as well as to various parts of the world. Truly Cornwall is a great county, and wise are they who take their capital there to invest under proper guidance. My advice is go and see at once for yourselves, and you will never listen to foolish detractions afterwards. I heard some time since a lecture delivered in London, by a gentleman who is paid to advance the interests of mining in this country, and the gist of his discourse was to discourage mining. I could scarcely believe my own ears for a long time, but the more I listened, the more I found that the volume of his argument was to prove that mining, as a whole, did not pay. Now, to the intelligent reader, this will be a matter easily accounted for, and demonstrative of health instead of decay in the business. It is the progressive, or undeveloped mines, that are taking up the capital of the investor, but the lecturer's evidence went to condemn and stop them, not seeing far enough to realise the fact, that this would destroy the future welfare of mining.

You hear a man now and then grumble, that he has lost his money in a Cornish mine—so it ought to be. It is the ordinary course of things, and of nature. You never hear of a farmer that is certain to reap a good crop from every field; not that he does

not grumble occasionally, under any loss or infliction of the sort; an Englishman's privilege is said to be, to pay and to grumble. We hear a man now and then complain that he has lost a ship, but we hear no serious discussion in the world from the circumstance, of stopping all the ship-building in England. Yet, to carry the argument touching the two branches of commerce to its legitimate issue, if a man loses his money in the share of a mine, and wishes to stop all the young mines in the country, the man who loses his share in a vessel, ought, by a parity of reasoning, to endeavour to stop all ship-building.

There is yet another mining article of commerce not noticed in our enumeration of the metals of this district—it is iron, the greatest of all the metals. Hæmatite iron occurs in Withiel and St. Breock, to the north of the granite, so that in this comparatively limited piece of ground, we have an immense assortment of minerals and metals, granite works for architecture, China clay and China stone for porcelain, silver, lead, tin, copper, blende, and possibly gold, for the combination of slate and green stones favour this conclusion, although the metal is not mentioned amongst the discovered articles of commerce; but what have been discovered, afford an abundant field for investment.

The St. Columb district seems to contain all the requisite rock-formation for great deposits of copper and tin, having isolated patches or bosses of granite, similar to St. Michael's Mount, which seems to favour the argument, that in the course of time, great mines will be opened in this part of the county, similar to those of Redruth, and the other great mining provinces. Instead of discouraging my friends from investing money in such trials, I conscientiously commend them to their consideration. I do not here pretend to make selections for them, but rather to indicate a practicable position for mines. I am, however, far from thinking that there is much difficulty in individualising what may be properly termed fair speculations in Cornwall. There are, it is said, in that county, about 200 mines, in different stages of progress; probably about one-third of them may be on the dividend list, and possibly some of them ought never to be put upon the catalogue at all; but of the two-thirds that are as yet unproductive of income, in the shape of interest upon the capital invested, I unhesitatingly declare, that I believe you might select two or three good Cornish mining agents in Cornwall, who would soon weed the list of all adventure that is exceptional in its character, or unreasonably dubious as to its issue.

## WEST PAR CONSOLS,

in the parish of St. Blazey, Cornwall, in 19,000 shares. *Secretary*, Mr. J. H. Murchison. *Manager*, Capt. Woolcock, St. Blazey. *Lord*, Major Carlyon. Dues, 1-15th. Depth of mine, 80 fathoms; no adit.

## MINERALS SOLD IN 1864.

		Tons cwt. qrs. lbs.						£	s.	d.
Copper ore	...	10	20	0	0	for	...	221	3	8
Black tin	...	6	3	1	15	,,	...	305	10	5
								<hr/>		
								£526	14	1
								<hr/>		

This mine is being wound up in the Stannary Court, but it has not been fairly tried.

## EAST WHEAL ROSE,

in Newlyn, Cornwall, the well-known rich lead mine, has been idle many years, except what has been done at the surface in extracting some lead from the "halvans." The first Company, formed by Messrs. R. Michell and Son, gained about £400,000. The burrows have been worked over two or three times at a profit. The following statistical returns, taken from official documents, will convey an accurate idea of the immense profits derived from legitimate mining in Cornwall.

No. of Shares.	Total amount paid per share.	Total dividends paid per share, per annum.		Per cent.			Average price. per ton.
128	£50	1840	... £ 23	...	46	...	£18 7 6
		1841	... 80	...	160	...	20 5 0
		1842	... 96	...	192	...	18 5 9
		1843	... 157 10	...	315	...	16 15 7
		1844	... 370	...	740	...	16 16 10
		1845	... 413 10	...	827	...	18 3 9
		1846	... 210	...	420	...	18 18 7
		1847	... 280	...	560	...	18 10 0
		1848	... 185	...	370	...	16 13 6
		1849	... 145	...	290	...	15 19 7
		1850	... 125	...	250	...	17 10 10
		1851	... 60	...	120	...	17 4 8

## CUDDRA,

in the parish of St. Austell, in the county of Cornwall, in 6,000 shares, resumed by the present Company in April, 1860. The *Purser* is Mr. John Green, 9, Gracechurch-street, London. *Local Purser*, Mr. Wm. Polkinghorne, Tywardreath. *Manager*,

Captain Francis Puckey. The rock is clay-slate. 65 men, 10 females, and 6 boys at work. *Mineral Owners*, the Hon. Capt. Vivian, and Miss Devonshire. Dues, 1-20th. Depth of mine at adit, 18 fathoms; under adit, 105 fathoms. Pumping-engine, 50-inch. Stamping-engine, 36-inch. Winding-engine, 24-inch.

#### MINERAL SOLD IN 1864.

												£	s.	d.
Black tin	...	33	16	1	9	...	for	...	2,139	13	6			

#### WHEAL POLHARMON,

in Tywardreath, Cornwall. *Purser*, Mr. Rd. Foster, Castle Lost-withiel. *Manager*, Captain Philip Rich, Tywardreath. *Lords*, Messrs. Kendall, Foster, and Rashleigh. Dues 1-18th. Mine, 60 fathoms under adit. There is a small pumping and winding-engine at work, and 35 men. Rock, clay-slate. No sale of ores in 1864.

This mine adjoins the eastern side of Fowey Consols, from which it was severed about two years ago.

#### NEW CROW HILL,

in St. Stephens, near St. Austell, Cornwall. *Purser*, Mr. William Browne, St. Austell. *Manager*, Captain William Trelease. *Landowner*, Hon. G. M. Fortescue. Dues, 1-18th. Depth of adit, 25 fathoms. Depth under adit, 70 fathoms. Rock, clay-slate and large elvan course. Winding-engine, 12-inch cylinder. Water-wheel, 40 feet by 2 feet, crushing lead ores; another water-wheel, 36 feet by 6 feet, drawing water and lifting 12 stamp-heads, and another wheel lifting 6 stamp heads. 50 men, 6 females, and 10 boys employed.

#### MINERALS SOLD IN 1864.

												£	s.	d.
Lead ore, 60 tons, Blende, 35 tons	...	for	...	1,230	0	0								
Mundic	...	...	...	330	0	0								
												£1,560	0	0

The works were begun in December, 1852. The lode is large and very kindly; it is highly reported on by all the mine-agents who have seen it. I do not, however, believe that the Company will derive any benefit from the mine, unless they sink the shaft considerably deeper than the present bottom. They ought to go to a 100 fathom level at once. It is highly probable that in depth the mine would yield lead ores sufficient to pay costs and give good dividends.

## PENHALLOW MOOR,

in Newlyn, Cornwall, in 512 shares. *Purser*, Mr. Edward Michell, Truro. *Manager*, Captain George Middleton, Wheal Rose, Scorrier. *Mineral Owners*, Bishop of Exeter and the Ecclesiastical Commissioners. Dues, 1-15th. Depth of adit, 8 fathoms. Depth below, 20 fathoms. 25 men, 1 female, and 1 boy employed. Pumping-engine, 60-inch. Rock, clay-slate.

The works were instituted by the present Company, January, 1864. There have been no returns. The depth is too shallow to expect any mineral yet, in that district. The mine adjoins East Wheal Rose and Cargoll, the latter rich now and the former lately so. No doubt in depth large deposits of lead will be discovered.

## WHEAL POLMEAR,

in St. Austell, Cornwall, in 1,024 shares. *Purser*, Mr. Francis Barratt, jun., St. Austell. The management is by a committee, consisting of Messrs. J. P. Bennetts, Falmouth, F. Barratt, sen., St. Austell, George Wright, Bodmin, William Luke, Charles-town, and R. H. Williams, St. Austell. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Adit, 34 fathoms deep. Depth below it, 30 fathoms. Rock, clay-slate, 1 mile from granite. Pumping-engine, 36-inch. Water-wheel, 36 feet by 4½ feet, pumping eastern part of sett. Water-wheel, 40 feet by 2 feet, crushing ores. The ores and *debris* drawn by horse whims. 73 men, 20 females, and 12 boys employed.

## MINERALS SOLD IN 1864.

		Tons.	cwt.	qrs.			£	s.	d.
Copper ore	...	753	1	0	...	for	3,859	3	4
Mundic	..	88	0	0	...	,,	74	13	9
							<hr/> £3,933 17 1 <hr/>		

The soil was broken in 1842, but the present Company took the works in hand about 10 years ago. The results have disappointed the expectations, inasmuch as the rich discoveries of copper have not lasted. The miners call it a "bunchy" mine. Considering the shallowness of the works, the returns may be regarded as fair. One could wish to see a trial 50 fathoms deeper, but the Company want heart to sink, so they are content to see what they can find at shallow points. A new wheel for pumping water has lately been set to work at the eastern side of the sett, where the prospects are good. The lodes are large, numerous, and promising.

## SOUTH CRINNIS,

in St. Austell, Cornwall. *Purser*, Mr. William Petherick, St. Austell. *Manager*, Mr. Francis Barratt, St. Austell. *Landowner*, Earl of Mount Edgcumbe. Dues, 1-15th. Depth of adit, 25 fathoms. Depth below it, 100 fathoms, but, at present, water to adit. Rock, clay-slate,  $1\frac{1}{2}$  miles from granite. 8 men, 4 females, and 2 boys employed. There is a 25-inch crushing engine.

## MINERALS SOLD IN 1864.

		Tons.	cwt.	qrs.			£	s.	d.
Copper ore	...	376	6	2	...	for	1,194	8	6
Blende	...	36	15	0	...	,,	47	5	8
							<hr/> £1,241 14 2 <hr/>		

Workings were entered upon in 1840. There has been a profit of £7,000, of which £350 was made in 1864, from works above and at the adit.

## PAR AND ST. BLAZEY CONSOLS,

(late Par and St. Blazey United), in the parish of St. Blazey, Cornwall, in 6,000 shares. *Purser*, Mr. Watson, Glasgow. *Manager*, Captain Wm. Taylor, Glasgow Caradon Mine, Liskeard. *Agent*, Captain Wm. Bryant, St. Blazey. *Landowner*, Sir Colman Rashleigh, Bart. In January, 1865, 20 men employed. Adit, 8 fathoms deep; bottom, 16 fathoms below adit. Pumping (rotary) engine, 36-inch, intended for stamping also. No returns in 1864. The present Company took the mine in February, 1864. The sett is near St. Blazey village, and contains several tin lodes of a very promising character, and one copper lode.

## WEST FOWEY CONSOLS (See PAR CONSOLS).

## MINERALS SOLD IN 1864.

					£	s.	d.
Copper ore	...	...	..	...	3,258	9	7
Black tin	...	...	...	...	9,609	2	6
Mundic	...	...	...	...	6	17	6
					£12,874	9	7

## PAR CONSOLS,

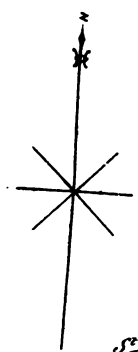
in the parish of St. Blazey, Cornwall, in 6,400 shares. *Purser*,

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Major Davies, R.M., Fowey. *Manager*, Captain Francis Puckey, St. Blazey. *Landowners*, Lord Mount Edgcumbe, Carthew, Rogers, Robartes, Rashleigh, and Duke of Cornwall. Dues, 1-16th. Depth of adit, 28 fathoms; depth below it, 225 fathoms. Rock, clay-slate. 300 men, 80 females, and 100 boys employed. Pumping-engines, 80, 80, 72, 70, and 32-inches. Stamping-engines, 24, and 30 and 20 (combined). Winding-engines, 26, 26, 22, 22, and 12-inches. Sawing-engine, 10-inch. Crushing-engine, 22-inch.

## MINERALS SOLD IN 1864.

		£	s.	d.
Copper ore	... ..	8,526	8	6
Black tin	... ..	19,489	19	3
Mundic	... ..	82	12	6
		<hr/>		
		£28,099	0	3

Par Consols was set to work about 30 years ago. The profit has been considerable, but latterly there has been a small monthly loss, in consequence of the low price of tin. It is hoped, however, that fresh discoveries will neutralise that effect ere long. The lease of West Fowey Consols having expired, Par Consols Company have taken a new lease of that mine, so that both mines are consolidated into one concern. The eastern part of West Fowey Consols is abandoned, and the engine sold, or removed. It is much to be regretted that the mines in St. Blazey district are so much reduced in number and value. The deepest level (225 fathoms below adit) is in the copper part of the mine, at present poor, particularly the bottom levels. From the tin parts the returns are about 25 tons per month. The problem that presents itself to the mind with reference to these mines is whether or not the same geological laws govern the rocks in which these mines are embedded that prevail in the Camborne district, and whether under the deep workings for copper, a change will not take place that will constitute the mines as almost entirely tin-bearing ones?

## FOWEY CONSOLS,

in Tywardreath, Cornwall, 4,940 shares. *Purser*, Major Davies, R.M., Fowey. *Manager*, Captain Francis Puckey, St. Blazey. *Lords*, Richard Kendall, Esq., John Tremayne, Esq., and Mr. Pedlar's representatives. Dues, 1-24th. Depth of adit, 40 fathoms; depth below, 300 fathoms. 250 men, 50 females, and 50 boys employed. Rock, clay-slate. Steam pumping-engine, 80-inch. All the other mechanical work is performed by water-

wheels, driven by a large stream brought into the sett by the late Mr. Treffry. There is a man-engine worked by water.

#### MINERALS SOLD IN 1864.

					£	s.	d.
Copper ore ...	...	...	...	...	18,806	9	1
Tin ...	...	...	...	...	28	18	6
Mundie ...	...	...	...	...	157	0	3
					<hr/>		
					£18,992	7	10

The first work towards the development of these mines dates back to 1813. The Company have been fortunate; the profits having been about £180,000. At present there is a small loss; but in a mine of such an extent, and with so many points of operation, a good bunch might be cut any day. It is, however, generally believed that the Company will not continue to work at a loss, and that the end of the operations is not far distant.

During 20 years these mines must have realised £9,000; if we take the capital as £36,000, the interest upon it would have been 25 per cent., and the sales averaged £70,000 per annum.

The late Mr. Treffry purchased the mines in 1822. In 1836, Lanescot, an adjoining mine, was united to the other three, and the whole consolidated into Fowey Consols. The undertaking began to prosper greatly; from August 1815 to the end of 1841, these mines returned 234,486 tons 8 cwt. 2 qrs. of copper ore, which sold for £1,422,683, out of which the profit paid to the adventurers (with a reserve fund not divided), amounted to £179,995 11s. 6d.

The value of the stock on the mine, engine, materials, &c., was from £50,000 to £60,000. There are altogether 6 steam engines at work, having a total amount of 302 horse-power. There are also 17 water wheels at work, of altogether 484 horse-power, and 3 hydraulic engines of 119 horse-power. Some years ago, there were 5 sumps, or engine-shafts, in course of sinking, the deepest being 200 fathoms below the adit of 45 fathoms. Twenty lodes were in the course of working, one of which runs through the setts for nearly two miles. The system of working was chiefly of that kind called "for discovery," large quantities of ground being constantly opened, and one large pile of ore left as a reserve, while operations were carried on to discover and raise more.

Although these very extensive mines have produced no profits to the proprietors for the last four years, the system of working them evinces great abilities in the agency. The modesty in the report offered by the management on the 11th October, is only

equalled by the strong reasoning power pervading it, and although at the time of writing it almost all the workings were so poor as to show the value of the lodes to have been only from £3 to £6 per fathom, except in one instance where a side lode was producing £12 per fathom; yet, by backing the agent's judgment in attacking the side lodes, and working upon the liberality of the lords, who ought without scruple or delay to abate the dues, with the very moderate calls the agents propose, we hold with the agents that this may yet be considered a good and safe speculation; but, whether this be so or not, it must be a matter of satisfaction to the Company to find the conduct of their affairs placed in such hands, that it may be safely predicted that all which wisdom and prudence can do for a mine will be done for this one.

### MAUDLIN,

in the parish of Lanlivery, Cornwall, in 6,000 shares. *Secretary*, Mr. G. H. Cardozo, 15 New Broad-street, London. *Purser*, Mr. W. P. Cardozo, Crenver Mine, Camborne. *Manager*, Captain Wm. Tregay, Redruth. 36 men, 2 females, and 4 boys employed; total 42. *Mineral Owner*, Duke of Cornwall. Dues, 1-20th. Depth of adit, 30 fathoms. Depth under adit, 70 fathoms. Workings commenced in 1851. Pumping-engine 36-inch. A water-wheel, 32 feet diameter and 3 feet 4 inches wide, draws up the stuff and stamps it.

A good discovery has just been made, and the prospects of this mine are very favourable.

The works are of very ancient origin, and produced large quantities of copper and tin, principally copper, from huge deposits in connection with the carbona, under large deposits of gossan. These mineral deposits, in their turn, became unbottomed by a second appearance of large deposits of gossan; in sinking through which, to reach the metallic minerals below, the present adventure is being carried on. While sinking through the gossan the returns of minerals are inconsiderable, and expected so to continue until the gossan is again unbottomed.

### WHEAL PAR,

in the parish of Luxulyan, Cornwall, in 1,024 shares. *Purser*, Mr. W. H. Jenkins, Truro. *Manager*, Captain Wm. Tregay, Redruth. *Lord*, Sir Colman Rashleigh, Bart. Dues 1-18th. 70 men, 18 females, and 12 boys employed; total, 100. Pumping-engine, 36-inch (horizontal). Adit, 15 fathoms deep. Depth of bottom, 25 fathoms under adit. Rock, decomposed granite.

## RETURNS FOR 1864.

	Tons. cwt. qrs. lbs.					£ s. d.		
Black tin ...	35	5	3	19	... sold for ...	2,237	4	10

The workings commenced in July, 1861. The principal adventurer is Mr. Sampson Waters, the successful miner. If the price of tin had stood at £80 per ton, they could now pay cost; but, however tin may stand in future, if they can find a market for the iron ore which they have in the sett, a profit will at once accrue, for of that mineral they have an inexhaustible stock in a large lode. The distance of the mine from Par wharves being only  $2\frac{1}{2}$  miles, the carriage of the ore thither will cost only 1s. 6d. per ton, by railway. The prospects, therefore, of the Company are most encouraging.

## PRIDEAUX WOOD,

in Lanlivery and Luxulyan, Cornwall (a tin and copper mine), ceased to work about twelve months ago. Nicholas Kendall, Esq., M.P., *Lord*.

## TRELOW,

in St. Issey, Cornwall. *Purser*, Mr. John Nicholls, St. Columb. *Manager*, Mr. James Richards, St. Columb. Rock, clay-slate. 4 men employed. The depth of mine is to adit, which is 8 fathoms, now being driven by the proprietor of the estate, who is the purser. It is a new mine. No returns in 1864.

## CHARLESTOWN UNITED,

in the parish of St. Austell, Cornwall, commenced by present Company in the year 1857. *Manager*, Mr. R. H. Williams. The rocks are granite and clay-slate. Persons employed number 512. *Mineral Owners*, Duke of Cornwall and others. Depth of mine at adit, 24 fathoms. Under, 155 fathoms. Pumping-engine, 70-inch. Stamping-engine, 40-inch. Winding-engine, 26-inch. Winding and capstan engine, 24-inch.

This mine yields large quantities of tin, which will give a profit when the price of that metal is as high as it was before the American War. In order to keep the mine in a self-sustaining position, the manager has discharged some of the miners, to reduce the cost, to avoid the necessity of calling on the adventurers. When tin advances a few pounds per ton, they can resume work, so as to give dividends again.

### CORNUBIA (LIMITED),

in the parish of Roche, Cornwall, in 12,000 shares. *Secretary*, Mr. G. Lavington. *Purser*, Mr. W. H. Gray, C.E., St. Austell. *Landowner*, Lord Falmouth. Dues, 1-18th. Depth of mine, 70 fathoms (no adit). 50 men, 14 females, and 5 boys (total 69) employed on the works. The mine is in the Granite and Clay-slate rocks. Pumping-engine, 50-inch cylinder. Stamping-engine, 24-inch cylinder. Water-wheel, 30-feet diameter, for drawing stuff. 2 other wheels for stamping, &c.

In the year 1864, 48 tons of tin were sold for about £3,000.

The Company which preceded the present, expended in works of utility, &c., about £20,000 above the returns. At present the returns about meet the current cost. The prospects are good, and the mine deserves a more spirited working.

### CARGOLL,

in the Parish of Newlyn, in 916 shares. *Purser*, Mr. Edward Mitchell. *Manager*, Capt. John Grose, Newlyn. *Mineral Owners*, Bishop of Exeter and Ecclesiastical Commissioners. Dues 1s. 4d. in the pound. Adit, 22 fathoms deep. Depth under adit, 120 fathoms. 152 men, 31 females, and 41 boys employed on the works. Rock clay-slate. 2 steam-engines pumping water: one of 72-inch, other 70-inch. 1 winding-engine, 24-inch cylinder. There is also a 30-feet water-wheel drawing water.

#### MINERALS SOLD IN THE YEAR 1864.

		Tons. cwt. qrs.					£	s.	d.
Copper ore	...	121	6	0	...	for	...	1,692	16 6
Lead ore	...	718	3	3	...	"	...	12,170	11 5
Blende	...	103	7	2	...	"	...	455	10 4
Arsenic	...	12	0	0	...	"	...	8	2 0
							<hr/>		
							£14,327 0 3		

This mine was included at first in the East Wheal Rose sett, but during the working of that mine little or no attention was paid to this part of the sett. When East Wheal Rose failed, attention was given to Cargoll, and with very gratifying results; for the adventurers now receive regular dividends, and are likely so to do for a long time to come.

### TREREW WHEAL ROSE,

in the parishes of Newlyn and Crantock, Cornwall, in 2,048 shares. Capt. John Middleton, of Shepherd's House, near

Ladock, is the *Purser and Manager*. Rock, a highly laminated slate. 7 men and 2 boys employed at the mine. *Landowner*, C. H. T. Hawkins, Esq. Dues, 1-18th. Depth of adit, 14 fathoms. Depth under adit, 6 fathoms. Works commenced in 1847. Expenditure on the works, about 3,000. Pumping-engine, 42-inch, recently erected. This mine, lying in the East Wheal Rose district, deserves some attention. There are several promising lodes in the sett, which, under the supervision of Captain Middleton, will, no doubt, receive a successful development. Very little, comparatively, has hitherto been done in the sett.

### NEW PEMBROKE,

in the Parish of St. Blazey, Cornwall, in 6,400 shares. Commenced in October, 1863, under the management of Captain Francis Puckey. *Secretary and Purser*, Mr. John Polkinghorne, Tywardreath. *Resident Agent*, Captain Jno. Puckey. Clay-slate is the "country" traversed by the lodes. 31 men employed. *Proprietors*, Major Carlyon, and Trustees of late John Rogers, of Roselyon, St. Blazey. Dues, 1-24th. Depth of mine, 60 fathoms; no adit. Pumping-engine, 24-inch, rotary. The outlay has been 17s. 6d. per share. Prospects very good. This sett is part of Old Pembroke and Wheal Edgumbe. No returns in 1864, but 1865 will present a different account, judging from the prospects.

### NEW WHEAL ROSE,

in the Parish of St. Columb Minor, Cornwall, in 4,096 shares. *Purser and Manager*, Captain Jno. Middleton. *Agent*, Captain James Hammitt, jun. Rock, clay slate. 4 men and 2 boys employed. *Mineral Lord*, Duke of Cornwall. Dues, 1-18th, after engine erected. Depth of adit, 16 fathoms. Depth under, 2 fathoms. Commenced about March, 1863. No returns. Several agents have reported favourably on this mine.

### WHEAL ELIZA,

in the Parish of St. Blazey, Cornwall. *Manager*, Mr. R. H. Williams. Persons employed, 260. Depth of mine to adit, 12; depth under it, 102 fathoms. Steam power employed:—Pumping-engine of 66-inch cylinder. Stamping-engine, 32-inch cylinder. Winding-engine, 25-inch cylinder. Capstan-engine, 12-inch cylinder. This mine adjoins Charlestown United Mines, and is held by the same parties; I believe two gentlemen only, and they regard it as a private speculation; different from most other mines, in which shares are passing from hand to hand. It is not in the share list, and furnishes no business for brokers.

## CARVATH UNITED,

in St. Austell. Idle.

## ST. AUSTELL CONSOLS,

in St. Stephens, near St. Austell, yielded several kinds of metallic minerals, some of which rarely occur in Cornwall; but the whole were insufficient to meet the expenditure. It was given up about three years ago.

## WHEAL BLENCOWE,

in ~~St. Stephens~~ Idle. Tin mine. The late Captain Jno. Dale

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## TRETOIL AND MESSER,

in Lanivet, Cornwall. Yielded copper and tin in considerable quantities, but not quite enough hitherto to pay costs; however they deserve to be tried again.

## WHEAL KEKEWICH,

in Lanivet. Idle. Little done. Copper.

## WHEAL MARY,

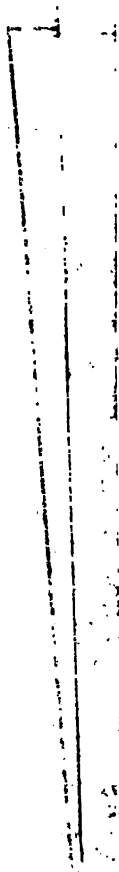
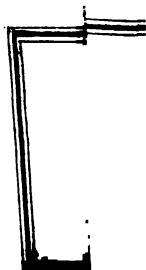
in Lanivet. Idle. Copper.

## BOSCUNDLE,

in St. Blazey. Lately worked by Mr. Josh. Morcom and party. Idle, but materials remain on the mine.

## EAST CRINNIS AND SOUTH PAR,

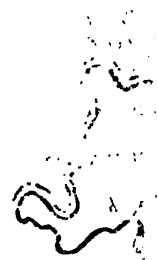
in St. Austell. Idle. In 1864 they sold only 14. cwt. of copper ore, at £14 per ton = £9 6s. 4d. East Crinnis, under the management of the late Captain Wm. Brenton, gave about £100,000 profit. After it was abandoned by his Company (Messrs. Taylor and Sons), another Company worked it until lately, at a loss of about £150,000. A copper mine. The ore failed in depth.



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## THE FOURTH, OR EASTERN DIVISION.

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BEGINNING my notice of this division by referring to its western boundary, it may be described as beginning at Bodmin, and running west to the Devon Great Consols on the Tamar. The water of that river drives the machinery of that celebrated mine. From north to south the district extends from the north coast to that of the south.

A central line from the south would extend from Looe to Tintagel Head. The area comprised may be estimated at about 600 square miles.

This territory is granitic, and is designated Bodmin Downs. It is surrounded by clay-slate, intersected by channels of greenstone, sloping generally east and west. One range of these Trap-pian rocks stretches from the vicinity of the Devon Great Consols northwestward for nearly 20 miles.

The theory that the central boss of granite was heaved upwards, the green stone veins being lateral fissures, gradually filled up, seems justified by the general phenomena. From such indications it would be inferred by experienced observers, that the ground abounded in metal; and such is the fact, the copper deposited to the eastward being the finest deposit of vein copper in the British Isles.

The Devon Great Consols is a regular copper lode, a mile in length, capped with rich gozzan, subtended by an outcrop of granite on the south, and by a remarkable run of greenstone on the north-west.

It is worthy of particular notice, that this vast deposit of copper remained undiscovered until within the last 17 years. This proves that mineral treasures may lie beneath our feet, without such surface indications as will certainly lead to their discovery. Possibly, hereafter, geological and mineralogical science may so advance, that the superficial phenomena may be always recognised, by which the treasures beneath may be traced. Mr. Josiah Hugo Hitchens, the discoverer and promoter of the Devon Great Consols, perceived that the gozzans on the backs of the lode were those of a great course of copper. It is, however, to be observed, that previously these gozzans had been sunk upon. The gentleman to whom this reference has been made, has frequently displayed a similarly clear judgment of surface *indicia*.

The portion of country I now describe is productive of a very useful commodity, apart from its metalliferous worth—granite for building purposes.

Various metals besides copper are also found there, tin, silver, lead, blende, antimony, manganese, and iron. The large granite boss raised at Brown Willey to 1,368 feet above the sea level, and in the Caradon district to 1,208 feet, and covering an area of 100 square miles, is surrounded by metalliferous treasures.

It is a striking fact connected with this general condition of country, that on the north-east side of the granite, for miles from Lesnewth to Lezant, there is no corresponding development of metal. It is more than merely possible, that rich veins are in that ground, which will be discovered hereafter as accident or advanced science may determine. Providence may reserve the riches of many districts in this manner, until human knowledge and human wants make it compatible with the economy of nature to bring them forth.

Dartmoor is another boss of granite, which probably has deep-lying relations to the district I have described. This region lies east of the Devon Great Consols, Wheal Friendship, and Wheal Betsey, all mines the yield of which has been continuous, the two latter for nearly a century. Dartmoor is literally surrounded by mines of sufficient importance to deserve a separate treatise for their particular description.

The existence of lodes purely argentiferous or nearly so is peculiar in England to this district. Some of these are very rich, having yielded between two and three hundred pounds worth of silver to the fathom. Although past experience does not warrant the idea, it is not unreasonable to hope that similar lodes will be discovered in other districts. In fact, this district is only beginning to be worked, and it is more easy to conjecture than compute its slumbering wealth.

The rich mines of the Caradons and Phoenixes are incipient enterprises, but indicate what yet may be attempted and performed elsewhere. Finally, the whole division of mining country of which this chapter treats, is extraordinary for the wealth it produces, and for the indices to uncounted wealth which it contains.

### CALSTOCK CONSOLS,

in the parish of Calstock, Cornwall. *Purser*, Mr. John Bayley, Plymouth. *Manager*, Capt. W. B. Collom, Calstock. *Mineral Owners*, Duke of Cornwall, Earl of Mount Edgcumbe, and Lord Ashburton. Dues, 1-15th. Rock, clay-slate,  $\frac{1}{2}$  mile south of granite. Adit, 55 fathoms deep. Bottom of mine, 62 fathoms under adit.

27 men, 3 females, and 2 boys employed. Pumping-engine, 40-inch. Winding-engine, 25-inch. Crushing is performed by a water-wheel 40 feet diameter.

MINERALS SOLD IN 1864.

	Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper ore	104	6	0	0	...	for	£394	0	0
Arsenic ...	17	15	0	0	...	„	11	19	1
							<hr/> £405 19 1 <hr/>		

Operations commenced about 18 years ago. There has been a loss, but hopes are entertained that the scale will turn. In the south cross-cut, on the eastern side of Danescombe, the Danescombe lode has been intersected, the western side of the cross-course, it is 3 feet wide of ore (black and yellow), a quantity of mundic prian and quartz; it is a most promising lode.

The men are driving through the cross-course to cut the lode the eastern side. The cross-course is cut into nearly 4 fathoms. A fine lode of gossan was discovered (23 feet wide) by the Kelly Railway Company, about 60 fathoms west of the engine-shaft. This lode is formed by the junction of the engine-shaft lode and two others. A level (55 fathoms deep) is driving towards this point, and very rich yellow copper ore is being met with as they approach the junction. Judging from the appearance of the lode on the back, a large deposit of ore will be discovered here. The lode opened upon in the south cross-cut is a continuation of the Okel Tor lode coming west.

EAST WHEAL JANE,

in the parish of Cardinham, Cornwall, is under the management of Captain James Seccombe, of Pendowry, near Liskeard. The *Secretary* is Mr. William Ward, of Threadneedle-street, London. *Landowner*, John T. Agar Robartes, Esq. Dues, 1-15th. Depth of adit, 30 fathoms. Depth under adit, 40 fathoms. Workings commenced in 1862. Pumping-engine, 40-inch. Winding-engine, 24-inch.

HERODSFOOT,

in Lanreath, Cornwall, in 1,024 shares. *Purser and Manager*, Captain Thomas Trevillion, Herodsfoot. *Landowners*, Sir John Trelawney and C. Lethbridge, Esq. Dues, 1-15th. Depth of mine, 150 fathoms. No adit. 70 men, 10 females, and 40 boys employed. Rock, clay-slate. Pumping-engine, 40-inch, which will give place to a 60-inch in June. Winding and crushing

engine, 25-inch. Water-wheel, 24 feet, for stamping. Water-wheel, 24-feet, for hauling.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Lead ore	...	626	14	2	0	...	for £14,585	7 2

The present Company commenced their operations at the 50 fathoms level in the year 1846. Dividends declared in 1864 were £5,376.

#### OKEL TOR,

in 12,288 shares, in the parish of Calstock, Cornwall. *Purser*, Mr. Channing, Kelly Villa, Calstock. *Manager*, Capt. W. B. Collom, Calstock. *Consulting Engineer*, Adam Murray, Esq., offices, 24 New-street, Spring Gardens, London. *Mineral Owner*, Duke of Cornwall. Dues, 1-15th. Depth of adit, 11 fathoms. Depth under adit, 80 fathoms. 80 men, 12 females, and 15 boys employed; total, 107. Pumping-engine, 50-inch. Winding and crushing engine, 22-inch. Rock, clay-slate, south of the granite.

The works commenced about 14 years ago; there has been a loss, but in 1864 the returns met the expenditure. The mine continues to progress very favourably; there are large reserves of copper ore discovered in the backs of the 80, 65, 50, and 40 fathom levels, with discoveries of ore still making in driving the levels.

For the present year it is expected the returns will be not less than £7,000 or £8,000; this will leave good profits. Besides the reserves of ore, another winze from the 50 to the 65 fathoms level has been holed, this will enable other stopes to be put to work, and will augment the reserve of ore broken. The lode in the different levels yields from 5 to 12 tons of ore to the fathom.

#### WHEAL POLLARD,

divided into 6,000 shares, in the parish of St. Cleer (Caradon District). There is a 25-inch engine on the mine, but operations have been temporarily suspended. *Manager*, Captain W. C. Cock.

#### COOMBE,

in Calstock, has been idle 10 years. Large returns of tin and copper.

#### WHEAL ZION,

in Calstock. Idle. Copper mine very promising at one time, and the shares ran high.

## BODMIN CONSOLS,

in Bodmin. Idle.

## WHEAL GLYN,

in Cardinham. Idle. Lead mine.

## CARADON UNITED,

in St. Neot. Idle.

## WHEAL ST. CLEER,

in St. Cleer. Idle.

## REDMOOR,

in Callington, tin and copper mine. Idle.

## GOONZION,

in St. Neot. Idle.

## WHEAL SICILY,

in Broadoak, Cornwall, idle. This mine is in Glyn Valley, and was drained by a water-wheel. Now being wound up in the Stannaries Court.

## WHEAL MARY CONSOLS,

in St. Neot. Idle.

## SILVER VALLEY,

in Calstock, Cornwall, has been idle many years. It was worked under the management of the late Captain Malachi, for silver and lead.

## PENBUGLE,

in Bodmin. Idle. Tin.

## WEST WHEAL EDWARD,

in Calstock, Cornwall, has been idle since the early part of 1864. Duchy land.

## WEST DRAKE WALLS,

in Calstock, Cornwall, stopped at Christmas, 1863. Capt. Gregory, of Drake Walls, late *Manager*. Duchy land. Tin mine.



## PHENIX,

in Linkinhorne, Cornwall, in 4 shares (held by 4 proprietors). *Purser and Secretary*, Mr. Henry Heane, 12 Regent-street, London. *Manager*, Captain Samuel Bennetts, at the mine. *Agent*, Captain Whitford. *Mineral Owner*, Duke of Cornwall. Dues, 1-18th. Depth of adit, 15 fathoms. Depth below adit, 185 fathoms. Rock, granite. 320 men, 60 females, and 80 boys employed. Pumping-engines, 60 and 40-inches, respectively. Stamping-engine, 18-inch. Stamping-engine, 26 and 26-inches (combined), now being erected, for lifting 100 heads. Winding-engines, 28 and 20-inches respectively. Water-wheel, pumping, 60-feet by 2-feet. Water-wheel, stamping (6 heads).

This is a remarkable mine in many respects, but perhaps the most remarkable of its aspects is exhibited in the fact that when its proprietors had expended £50,000 in making trials which contributed to the discovery of ore and to the establishment of a mining district, to the great advantage of the Duchy of Cornwall, the stolid manager of that important trust, who ought to be an example of liberality and wisdom, refused to re-grant or to continue their lease upon reasonable terms. So much for these contemptible exemplars of what is the duty of the landlord to the miner. In this mine, as in the Great Gwennap Consols, the agents of the Prince did not succeed in destroying the mine, for by the additional outlay of £12,000, making altogether £62,000, the mine has made dividends to the extent of upwards of £100,000 since November, 1852. We may, therefore, state that the profits have been about £8,000 a year, or 12 per cent. upon the total outlay; but in this, as in many other cases, the dividends are taken by the newer Company upon £12,000 capital, which gives them nearly 70 per cent. interest. From such considerations as arise from the facts here stated, we see how unwise it is, after going to an expenditure of this sort, to stop short and allow others to reap the benefit of our outlay; and yet, unfortunately, this is the usual course of mining; the reapers of the harvest being seldom those who sow the seed. We ought to take a lesson from these circumstances, and hold on to our properties until they become remunerative. As is usual in lodes containing great deposits of metal, the back of this vein was filled with the sign of ore, a gozzan that in certain places held down 200 fathoms below the surface. Think of that, all you that advocate the doctrine that our deposits of ore will only go down to very limited depths below the surface! If the shadow or sign goes down 200 fathoms, to what depth may we expect to find the substance or body from which it emanates? Another uncommon feature in this mine is that the adit communicates to one of the shafts at the depth of 100 fathoms, a great depth for a Cornish adit; and

yet another peculiarity is that it is divided only into 4 shares, and worked by only 4 proprietors.

### EAST PHOENIX,

in Linkinhorne, Cornwall. *Purser and Manager*, Captain James Seccombe, jun., Pendowry, near Liskeard. Rocks, granite and slate. Persons employed, 25; also 1 steam pumping-engine and a winding-engine. There has been no sale of ores.

This is a trial mine in a good country, possessing the profit-giving lodes of Wheal Phoenix, with a new lease. The shaft has been sunk down to the depth at which the Phoenix lodes become productive. There is great hope that if the adventurers do not become faint-hearted their efforts will be rewarded. The surface of the mine is in clay-slate, under which decline the series of disturbed granites, broken by cross courses that have filled the great lodes of the district with such hordes of copper as to enable them to be worked with large returns and profits. The mine is one of those trials taken up upon scientific principles that if carried out will probably be another triumph for those who believe in order, and that the deposits in our lodes are not the result of casualty or chance.

### CRADDOCK MOOR,

in the parish of St. Cleer, Cornwall, in 1,055 shares. *Purser*, Mr. John Taylor, St. Cleer, Liskeard. *Manager*, Captain Henry Taylor, St. Cleer. *Landowner*, Rev. G. P. Norris. Dues, 1-15th. Depth of mine, 126 fathoms. No adit. 140 men, 30 females, and 30 boys employed. Rock, granite, interspersed with a little elvan. Pumping-engine, 24-inch. Pumping and winding engine, 16-inch.

### MINERAL SOLD IN 1864.

	Tons cwt. qrs. lbs.					£ s. d.			
Copper ore	1,682	6	3	0	... for ...	10,823	6	4	

This mine, that takes its name from the famous old British warrior, Caractacus, shows the best evidence of good management. The lodes in the richest parts, according to the reports, seldom yield more than 2 tons to the fathom; now, considering that the produce of a fathom of such ground is not worth above £12 or £13, it is a remarkable fact that this mine should have made dividends nearly to the extent of the outlay. Such facts as these speak much for British mining, and although stocks of this sort may be so dealt with in the market as to bring disgrace upon the calling, it is yet a pleasant thing to see that the miner stands

with clean hands in the matter, and conducts his business with a care, respectability, and prudence that demands our admiration.

### GONAMENA,

in St. Cleer, Cornwall, in 6,144 shares. *Purser*, Mr. Richard Hingston, Liskeard. *Accountant*, Mr. John Taylor, St. Cleer. *Manager*, Captain Richard Pascoe, at the mine. *Proprietress of the Land*, Mrs. Elliott. Dues, 1-15th. Depth of adit, 10 fathoms; depth below it, 114 fathoms. Rock, granite. 82 men, 4 females, and 8 boys employed. Pumping-engine, 40-inch. Stamping, winding and crushing-engine, 30-inch.

This mine is in a good geological position, being surrounded by healthy mines, and, on the western slope of Caradon Hill, containing several lodes and cross courses, and on one part one of the lodes is reported by the agents to yield 4 tons of copper ore to the fathom; any length of this ground would enable the Company to derive profits; upwards of £20,000 has been expended; but, apparently, at first the progress of the mine was hampered by the engine power; judging from analogy, under fair management, this ought to make a good mine.

### EAST CARADON,

in the parish of Linkinhorne, Cornwall, in 6,144 shares. *Secretary*, Mr. Charles Richard Norton, Salisbury. *Manager*, Captain James Seccombe, Menheniot. *Landowners*, Messrs. Mark Symons and Seccombe. Dues, 1-18th. Adit, 20 fathoms; depth below, 90 fathoms. Rocks, granite, clay-slate and elvan. 250 persons employed. Pumping-engines, 48 and 40-inch. Winding and crushing-engine, 24-inch.

#### MINERAL SOLD IN 1864.

	Tons.			£	s.	d.
Copper ore ...	6,046	...	for ...	35,488	13	7

This is one of those mines in which it is not difficult to see how the profits are produced. The circular lode produces in places deposits of ore worth from £40 to £60 per fathom; and, as most of the mining ground of the world can be stoped away in the lodes for from £2 to £5 per fathom, it is plain to see how the margin of from £35 to £55 per fathom gain on the working goes to form large profits. The sales from this mine frequently amount to £3,000 per month, while the cost is barely £1,000, showing a rich lode, a good mine, and good management. The boundaries eastward the great bases of these productive copper

lodes remain intact, and will continue no doubt to make thousands of pounds profits as the resources of the mine are followed downward; the depth is nothing, and will not be considerable, or offer much difficulty as to the working for the next 20 years, while the profits have already been from £70,000 to £80,000 upon an outlay of £20,000, the selling value being £90,000. The mine has made occasionally £2,000 a month dividends, or more than cent. per cent. upon the whole outlay. It is not easy to imagine how the most sanguine financier can expect a better result.

### WEST CARADON,

in St. Cleer, Cornwall, in 1,024 shares. *Secretary*, Mr. W. J. Lavington, 20, St. Helen's Place, London. *Manager*, Captain William Johns, at the mine. *Landowners*, Executors of Mr. Foulkes and Mr. Hender. Dues, 1-15th. Depth of adit, 30 fathoms; depth below it, 170 fathoms. 210 men, 30 females, and 14 boys employed. Rocks, granite and elvan courses. Pumping-engine, 50-inch. Stamping and crushing, 30-inch. Winding-engine, 22-inch. Winding and capstan-engine, 24-inch.

The works were commenced about 25 years ago, and the result has been dividends of profit of upwards of £100,000; but in 1864, the returns only covered the current cost.

### MINERAL SOLD IN 1864.

Tons cwt. qrs. lbs.					£ s. d.		
Copper ore...	1,871	10	0	0	...	for ...	12,949 9 4

From an outlay of £10,000 this mine has divided in profit £100,000; she has been worked for about 20 years, which would, without compound interest, give £5,000 a year, or 50 per cent. upon the outlay, while the selling value is quoted at a little under the outlay. In a mine of this magnitude, with the shafts 170 fathoms below the adit, with apparently skilful management, as is evinced by the agents taking advantage of the cross courses for sinking their shafts with greater speed and economy, with 8 to 10 lodes already discovered, and natural facilities for cross cutting those productive granite rocks, it would be contrary to the general course of things to suppose that there is not yet a successful career open to the proprietors of West Caradon.

### SOUTH HERODSFOOT,

in the Parish of Duloe, Cornwall, in 1,024 shares. *Secretary*, Mr. John Watson, 13, George Yard, Lombard-street, London. No returns.

CARADON VALE, NEW SOUTH CARADON, NORTH HERODSFOOT, NORTH LUDCOTT, NORTH TRE-LAWNY, NORTH WREY CONSOLS, WEST PHCENIX.

All these mines, in the Liskeard district, are idle. No returns in 1864. Little has been done in them.

### WHEAL MARY ANN,

in the parish of Menheniot, Cornwall, in 1,024 shares. *Purser* and *Manager*, Mr. Peter Clymo, Liskeard. Pumping-engines, 80 and 60-inch. Stamping and crushing-engine, 22-inch. Winding engine, 24-inch.

#### MINERAL SOLD IN 1864.

	Tons	cwt.	qrs.			£	s.	d.
Lead ore...	752	0	0	...	for	...	18,340	12 2

### MARKE VALLEY,

in the parish of Linkinhorne, in 9,000 shares. *Purser*, Mr. John Harding, Salisbury. *Manager*, Captain James Seccombe, Menheniot. *Landowners*, Messrs. Mark Symons and Seccombe. Dues, 1-18th. Depth of adit, 30 fathoms; depth below adit, 112 fathoms. Pumping-engine, 70 and 36-inch. Stamping, winding, and crushing-engine, 33-inch. Winding-engine, 18-inch. Water-wheel, 40 feet diam., crushing. Ditto, 52 feet by 3½ feet, pumping.

#### MINERAL SOLD IN 1864.

	Tons.	cwt.	qrs.			£	s.	d.
Copper	...	5,071	0 0	...	for	...	16,946	18 10

A fair illustration of mining investment in England is afforded in this mine by its division into a large number of shares; and this principle seems to act very well in this mine, and to be in favour of the public. The mine cannot be considered a very rich one, as the levels are not reported to produce so much ore as might be supposed from the dividends, which certainly betokens good, not to say masterly management. The mine has paid profits to the extent of about £30,000, and the selling value is about £50,000, making together £80,000. The outlay, in round numbers, being about £40,000, one half of dividends and market value; taking the dividends at £600 per month, say £7,000 a year, investors would gain about 14 per cent. for their money. The locality of this mine, in a geological point of view, is good, and conformatory to the miners' opinion of the true position of the strata, the rock of the mine being killas over the granite of the Caradon Hill, the

sett being nearly a mile on the run of the lodes, and embracing half a mile in width. It seems, reasoning from the aspect of affairs in this mine, to be a good plan to divide mines into a considerable number of shares; in this every share at present is represented by about a £5 note, a handy and convenient division, affording a medium for even the humblest speculator, and not debaring the richest from taking a share in the adventure. Had the mine been divided even into 1,000 shares, each share being worth say £45, might have prevented many from purchasing them, while, at the same time, the stock seems to be fairly appreciated, and the system seems rather to augment than diminish the whole value of the property.

### TRELAWNY,

in Menheniot, Cornwall, in 1,040 shares. *Secretary*, Mr. W. J. Lavington, 20 St. Helen's Place, London. *Accountant*, Mr. James Cock, Liskeard. *Manager*, Captain William Johns, West Caradon. *Landowners*, C. Trelawny, Esq., Dr. Honey, and others. Mr. Trelawny's dues, 1-18th; Dr. Honey's, 1-15th; Executors of Carthew, 1-18th. Depth of adit, 10 fathoms; depth below adit, 196 fathoms. Rock, clay-slate. Pumping-engines, 70 and 50-inch. Winding-engines, 20 and 20-inch. Water-wheel crushing ores, size, 36 by 25 feet. Two water-wheels stamping lead ores (lifting 32 heads).

#### MINERAL SOLD IN 1864.

Tons. cwt. qrs. lbs.

Lead ore ... 827 0 0 0 ... for ... £20,900

This is a silver lead mine, the ores of which are very rich in silver, there being such a combination of silver with the lead as to render the ore worth £27 per ton; in fact, this is just as much as silver as a lead mine, as the ore must contain about 60oz. of this metal to the ton, a great guarantee that the prices of the ore can never fall to a very low average; and another fact of great importance is that the lode bears its ore to the depth of 200 fathoms as ascertained from the surface, and continues its bearing qualities lengthwise through the adjoining mine of Wheal Mary Ann, both being in the same lode.

The works commenced here about 20 years ago, the profits on which amount to upwards of £50,000, and dividends still continue to be made in fair quantities. The outlay upon these good and lasting mining works, the management of which seems to be a pattern of correctness, was only about £6,000. The selling value of the mine to the public seems to be about £20,000, so that it may be stated that about £70,000 has been realised in about

20 years, or between £3,000 and £4,000 upon £6,000, or from 50 to 60 per cent. per annum, and the corpus of the mine seems inexhaustible. In the face of this class of facts it is a strange sight to see men rising up in public meetings and denouncing mining as a deceptive and untrustworthy occupation. Unfortunately there is much to be said against the *modus operandi* of conducting the sale of mining shares in the market; but against mining itself it is as absurd as fallacious to utter a single sentence.

### CARADON HILL,

(late West-South Caradon), in St. Cleer, Cornwall, in 4,609 shares. Now idle. The late *Secretary*, Mr. W. J. Dunsford, deceased. The late *Manager*, Mr. Francis Pryor, Redruth. *Landowner*, Mr. Rogers. Dues, 1-18th. Depth of mine (adit), 30 fathoms. No persons employed. Rocks, granite and clay-slate.

Copper ore sold in 1864, £20.

The operation of driving an adit commenced about 1860. The death of Mr. Dunsford, it is said, led to the suspension of the work twelve months ago. The lodes are kindly, and it is understood that the work will be resumed.

### EAST WHEAL FLORENCE,

in Callington, Cornwall, in 6,000 shares. *Purser*, Mr. Knowling, Devonport. *Manager*, Captain William Verran, Callington. *Landowner*, Lady Ashburton. Depth of adit, 15 fathoms; depth below, 6 feet (shaft now being sunk). 21 men and 1 boy employed. Pumping-engine, 25-inch. Rock, clay-slate.

Commenced Midsummer, 1863—prospects good, for the small amount of development.

### EAST WHEAL AGAR,

in St. Cleer, Cornwall, in 1,100 shares. *Purser*, Mr. John Basset Collins, Bodmin. *Manager*, Captain William Johns, West Caradon. *Landowner*, J. Thomas Agar Robartes, Esq. Dues, 1-18th. Depth of adit, 25 fathoms; depth under adit, 60 fathoms. Rocks, granite and elvan, near killas. 28 men and 2 boys employed. Pumping and winding-engine, 24-inch. There was no sale of ores in 1864, but in the present year (1865) they have sold about £150 worth of copper ore. The works were re-commenced in 1860. At present the prospects of increasing returns are said to be good.

# GLASGOW CARADON CONSOLS,

(late Tokenbury), in St. Ive, Cornwall, in 30,000 shares. *Secretary*, Mr. David Dunlop, Glasgow. *Manager*, Captain William Taylor, at the mine. *Landowner*, John Elliott, Esq., banker, Liskeard. Dues, 1-15th. Depth of adit, 5 fathoms; depth below, 75 fathoms. Rocks, granite, clay-slate, and elvan. 64 men, 9 females, and 3 boys employed. Pumping-engine, 40-inch. Winding and crushing-engine, 24-inch.

## MINERAL SOLD IN 1864.

	Tons.					£	s.	d.
Copper ore ...	702	...	...	...	for ...	2,652	0	0

The works commenced about 4 years ago in the western part of the sett, to which their present operations are confined. Although, up to the present time, they have sustained a small loss, the prospects are highly encouraging for the future.

# NORTH PHENIX,

in Linkinhorne, Cornwall, in 4,000 shares. *Purser*, Mr. John Dingle, Darley, near Liskeard. *Manager*, Captain Martin, near the mine. *Landowner*, John Dingle, Esq. Dues, 1-15th. Depth of adit, 15 fathoms; depth below, 150 fathoms. Persons employed, 20. No steam machinery. 36-foot water-wheel draws the stuff; and a water-wheel, 50 feet by 3½ feet, pumps the water.

## MINERALS SOLD IN 1864.

Copper ore ...	...	...	...	...	£100
----------------	-----	-----	-----	-----	------

# NEW WHEAL MARTHA,

in the parish of Stoke Climsland, Cornwall, in 16,500 shares. *Purser and Manager*, Captain Henry Rickard. *Mineral Owner*, Duke of Cornwall. Dues, 1-60th. Depth of adit, 14 fathoms; depth under adit, 86 fathoms. Rock, clay-slate. 120 men, 40 females, and 30 boys employed. Pumping-engine, 50-inch. Winding and crushing-engine, 22-inch. Water-wheel, pumping water, 36 by 2 feet. Water-wheel, winding, 16 by 4 feet.

## MINERALS SOLD IN 1864.

Copper ore and mundic ..	...	...	...	£10,000
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Works re-commenced about 6 years ago. There has been a loss, but the returns at present nearly meet the expenditure.



This mine in 1850 was called "Wheal Martha," afterwards "Great Wheal Martha.

### NEW CORNISH,

(late Latchley Consols), in the Parish of Calstock, Cornwall. *Purser and Manager*, Captain James Richards, Devon Great Consols. *Mineral Owners*, Duke of Cornwall and Mr. Stephens. Dues, 1-15th. Depth of adit, eastern part, 12 fathoms; and depth under, 80 fathoms. Rock, clay-slate. Pumping-engine, 50-inch. Winding and crushing-engine, 26-inch. 40 men, 6 females, and 6 boys employed. Present Company commenced about 4 years ago.

### PRINCE OF WALES,

(late Harrobarrow), in Calstock, Cornwall, in 12,800 shares. *Purser*, Mr. H. E. Croker, Plymouth. *Secretary*, Mr. Jehu Hitchins, St. Michael's Alley, Cornhill. *Manager*, Captain William Gifford, Harrobarrow. *Mineral Owner*, Duke of Cornwall. Dues, 1-15th. Depth of adit at Goodluck engine shaft, 42 fathoms; depth under adit at Goodluck engine shaft, 12 fathoms; depth on new lode, 30 fathoms from surface. 10 men employed. No steam machinery. Water-wheel, drawing water, 20 feet by 2; also lifting 6 stamp heads. No sale in 1864. This is an old mine resumed about 2 years ago on a new lode. There was £1,000 called up to begin; since then 4 calls, amounting to £1,280, have been made. The lodes are tin and copper; there is also a silver lode in the sett. The new lode is very kindly.

### SOUTH CARADON WHEAL HOOPER,

in the parish of St. Cleer, Cornwall. *Secretary*, Mr. John Watson, George Yard, Lombard Street, London. *Manager*, Captain William Cock, on the mine. *Landowners*, Executors of late Mr. Hooper. Dues, 1-15th. Depth of mine, 90 fathoms (no adit). Rocks, granite and clay-slate. Persons employed, 30. Steam pumping-engine, 36-inch. The operations commenced about 10 years ago, but up to this time no minerals have been sent to market. Of late the prospects of the mine have improved.

### BOTELET,

in the parish of Lanreath, Cornwall, in 1,024 shares. Commenced in 1863. *Secretary*, Mr. Rd. Clogg, Liskeard. *Manager*, Captain J. Trevillion. Rock, clay slate, of the most congenial character for lead. 25 men, 3 females, and 2 boys employed—total 30. *Lord*, Charles Trelawney, Esq. Dues, 1-18th.

Depth of mine, 26 fathoms. Expenditure about £2,000 over returns, which, in 1864, were—lead ore 10 tons, sold for £174 5s. Steam power—16-inch pumping-engine. This mine is about 2½ miles south of Herodsfoot Mine, in what is called “virgin ground.” The Company have sunk 26 fathoms on the lode, and in cross-cutting eastward they intersected another lode (lead). From the prospects presented, the manager, in his report, is very sanguine in his expectation of early profits.

### CARADON AND PHŒNIX CONSOLS,

in North Hill, Cornwall, is in 12,000 shares. *Purser*, Mr. Pearson, North Hill, Launceston. *Secretary*, Mr. Short, Launceston. *Manager*, Captain Wm. Richards, Henwood, Callington. *Land-owners*, Fras. Rodd, Esq., and others. Dues, 1-15th. Depth of mine at adit, 16 fathoms; under that 33 fathoms. 25 men employed. The water is drawn off by a water-wheel, 30 feet by 4 feet. The rocks are granite, elvan, and killas. The works commenced about 20 years ago, and there has been an outlay of about £11,000 altogether. It was worked twice before the present Company took it twelve months ago. It is considered to be a first-class speculation, there being 14 lodes in the sett, but the object of the present Company is to test 3 lodes by the engine-shaft at the 30 and deeper levels. First, with that object in view, the shaft will be in regular course of sinking below the 30 in about a month from this time (February 14, 1865). There is ample water power in the sett for all purposes, thereby avoiding steam power and its expensive attendants. The Manager carries on the works in confidence of success.

### CARADON CONSOLS,

in 914 shares, in the parish of St. Cleer, Cornwall. *Secretary*, Mr. Edward King, 22A Austinfriars. *Manager*, Captain Wm. Rich. *Lord*, Captain Pode, Ivybridge. Dues, 1-15th. Depth of mine from surface, diagonally, 80 fathoms; no adit, 12 men employed. Rocks, granite, clay slate in southern part of sett. Pumping-engine, 50-inch cylinder. Winding-engine, 24-inch. The works commenced in the year 1853.

### EAST GUNNISLAKE AND SOUTH BEDFORD,

in the parishes of Calstock, Cornwall, and Tavistock, Devonshire, in 4,000 shares. Commenced in 1850. *Manager and Secretary*, Mr. W. G. Gard, Gunnislake. *Purser*, Mr. T. B. Laws, Great

St. Helen's. *Agent*, Captain Jas. Phillips. Rocks, granite and clay slate. The river Tamar, which is the county boundary, is also the boundary of the two kinds of rock; granite is on the Cornwall side. 36 men, 4 females, and 2 boys employed—total, 42. *Lord*, Duke of Bedford. *Dues*, 1-15th. *Adit*, 35 fathoms; depth under that, 46 fathoms. The outlay has been about £15,000, of which about £2,100 was expended in 1864. Water-wheel, drawing water, 36 feet by 5 feet. Water-wheel, drawing and crushing, 20 feet by 5 feet.

## SOLD IN 1864.

	Tons. cwt. qrs.						£	s.	d.
Copper ore	...	201	16	0	...	for	...	653	10 8

## HAWKMOOR,

in the parish of Calstock, Cornwall, in 7,219 shares. *Purser*, Mr. Ponsford Fisher, Plymouth. *Secretary*, Mr. G. H. Cardozo, London. *Manager*, Captain Joseph Richards, Lamerton, Tavistock. Rocks, granite and slate. 16 men, 3 females, and 2 boys at work. *Mineral Owners*, Duke of Cornwall, and Rev. Henry Walter Beauford. *Dues*, 1-15th. Depth of mine, 80 fathoms. The working commenced in 1849. The mechanical work is performed by water-wheels, of which one, 18-feet diameter by 15-feet breadth, draws water and crushes the ore; another, 21-feet diameter by 12-feet breadth, draws water; and another, 18-feet by 5, draws water and stamps the tin; but at present the widest wheel is idle.

## MINERALS SOLD IN 1864.

	Tons cwt. qrs. lbs.							£	s.	d.
Copper ore	...	81	14	3	0	...	for	...	382	3 3
Black tin	...	5	4	0	2	...	"	...	287	1 8
									<hr/> £669	<hr/> 4 11

## GUNNISLAKE (CLITTERS),

in the parish of Calstock, Cornwall, in 10,240 shares. *Purser*, Mr. R. J. Skinner, Tavistock. *Manager*, Capt. William Skewis, Tavistock. Rocks, granite chiefly, some part of sett in clay-slate. Persons employed, 192. *Mineral Owners*, Duke of Cornwall and Rev. H. W. Beauford. *Dues* 1-15th.

The adit is remarkably deep being from 70 to 105 fathoms under the surface, thus giving the Company the opportunity of working the lodes to that depth without any water charge. The

depth of the work under the adit is 18 fathoms. The mine is drained at present by a water-wheel 40 feet by 4 feet; but ample steam-power has lately been provided for all purposes, viz.:—a 40-inch pumping-engine, a 30-inch stamping-engine, and a 30-inch winding-engine. The outlay beyond returns about £5,000. The profit in the year 1864 (£2,500) has been expended in machinery, but when that is once in perfect order, the returns will leave a large profit.

### HINGSTON DOWNS CONSOLS,

in the parish of Calstock, Cornwall, in 6,000 shares. Commenced in the year 1846. *Secretary*, Mr. T. B. Laws, Great Saint Helen's, London. *Purser*, Mr. W. E. Cummins, Tavistock. *Manager* (resident on the mine), Captain Thomas Richards. Rocks, granite and killas, with elvan courses intersecting. 167 men, 33 females, and 25 boys employed; total, 225. *Lord* (of minerals) Duke of Cornwall. Dues (during pleasure) 1-60th.

Depth, on dip of lode, 130 fathoms from surface. The machinery consists of a 50-inch pumping-engine, and a 30 and 17-inch (combined) winding and crushing engine.

IN THE YEAR 1864, THE COMPANY SOLD,

	Tons.	cwt.	qrs.	lbs.		£	s.	d.
Copper ore ...	2,725	10	2	0	... for ...	11,751	4	9

The loss, from the commencement, amounts to about £16,000, but no part of that occurred in 1864. Considering that the Company had to open an entirely new mine, the loss may be regarded as not large.

### OLD GUNNISLAKE (LIMITED),

(in 9,000 shares), situated in Calstock, Cornwall. *Purser*, Mr. Jehu Hitchens, St. Michael's Alley, Cornhill, London. *Manager and Local Purser*, Mr. W. G. Gard, Gunnislake. *Mineral Owner*, Duke of Cornwall. Dues on copper, 1-15th. Dues on tin, 1-20th. Depth of adit, 40 fathoms. Depth below adit, 90 fathoms. Men employed, 34.

The present Company commenced late in 1864, and have already nearly completed a 40-inch pumping-engine, and a 12-inch high-pressure expansion winding-engine. The late Messrs. Williams and Co. (Scorrier), worked this mine many years, and realised very large profits. Since then the late Captain Teague, of Redruth, worked it a short time. A very high opinion in favour of the mine is generally entertained by persons conversant with it.

## WHEAL NORRIS,

(in 6,000 shares), in St. Cleer, Cornwall, Liskeard district; in granite. *Purser*, Mr. Thomas W. Field, Marazion. *Manager*, Captain John Andrews, St. Cleer. 54 men, 10 females, and 21 boys (total 85), employed on the works. J. Norris, Esq., is the *Lord*, who receives 1-15th dues. Depth of mine to adit, 14 fathoms, and under adit, 56 fathoms. Works commenced in 1852, but nothing was done under adit till 1860. Sum expended, £23,275, of which £2,000 was expended in 1864. There are 10 lodes in the sett; some of them South and West Caradon lodes. Present operations on 3 lodes, from one of which they are raising 3 or 4 tons of tin per month, and from the other two a little copper.

## RETURNS IN 1864.

		Tons cwt. qrs. lbs.					£ s. d.		
Black tin	...	41	12	2	13	... sold for	...	2,480	11 1

The position, management, and circumstances of the mine, justify expectations of future dividends.

## WHEAL ARTHUR,

in the parish of Calstock, Cornwall, in 5,790 shares. *Purser*, Mr. William Watson, 27 Athenæum Street, Plymouth. *Secretary*, Mr. J. H. Murchison, Austinfriars. *Manager*, Captain Thos. Carpenter, on the mine. The mine is in the clay-slate formation. 28 men, 4 females, and 2 boys employed. *Mineral Owner*, Duke of Cornwall. Dues 1-30th. Depth of adit, 50 fathoms. Depth under adit, 57 fathoms. Works commenced in September, 1851.

There has been a loss on the working, which has been reduced by dividends, amounting to £8,000. The profit, in 1864, was about £1,200. They are now sinking the engine-shaft to the 90 to cut two lodes, at the junction of which it is expected a rich deposit will be found.

Machinery employed, 60-inch pumping-engine, a water-wheel drawing stuff and crushing the ores, a water-stamps, now idle.

## WHEAL EDWARD,

Parish of Calstock, in 4,096 shares, Cornwall. *Purser*, Mr. W. E. Cummins, Tavistock. *Secretary*, Mr. Edward King, London. *Manager*, Capt. George Rowe, (resident on the mine). *Mineral Owner*, Duke of Cornwall. Dues, 1-30th. Depth of adit, 61 fathoms. Depth below, 44 fathoms. 15 men, 1 female, and 1 boy, employed. Pumping-engine, 36-inch. Winding and crushing, 22-inch. Rock clay-slate.

RETURNS IN 1864.

Copper ore ... .. £1,900

The working commenced in 1851. The loss up to this time has been about £20,000. In the year 1864, it was about £1,400; but from present prospects it may be reasonably hoped that the Company will be soon placed in a much more agreeable position.

WEST SHARP TOR,

in 256 shares, in the parish of Linkinghorne, Cornwall. *Secretary*, Mr. W. A. Buckley, Great St. Helens, London. *Manager*, Captain William Richards, Hénwood, near Callington. *Mineral Owner*, Duke of Cornwall. Dues, 1-15th. Depth of adit, 10 fathoms. Under adit, 152 fathoms. 40 men, 5 females, and 5 boys employed. The rocks are granite, elvan and killas (clay slate). Pumping-engine, 50-inch. Winding-engine, 14-inch. The working commenced about 16 years ago, and there has been a considerable loss on it; but a discovery of copper ore having been recently made in the bottom level, the mine is likely to become very valuable. A sampling of copper ore will shortly take place.

GREAT CARADON,

in St. Ive, Cornwall, in 4,096 shares. *Secretary*, Mr. Edward King, 22a, Austinfriars. *Manager*, Captain F. C. Harpur, Callington. *Landowner*, J. L. Peter, Esq., Redruth. Dues, 1-15th. 17 men and 3 boys employed in the mine. Depth of mine, 60 fathoms. Rock clay-slate, a short distance from the granite. The locality is good, which is a fact of importance in favour of the adventure, but the explorations are too limited to admit of many remarks.

KELLY BRAY,

in the parish of Callington, Cornwall, in 5,000 shares, commenced in 1845. The *Purser and Manager* is Captain George Rowe, of Wheal Edward. *Secretary*, Mr. Edward King, London. Rock, clay-slate. 39 men, 4 females, and 4 boys employed (total 47). *Mineral Owner*, Duke of Cornwall. Dues, 1-30th. Depth of adit, 27 fathoms. Under adit, 135 fathoms. Pumping-engine, 60-inch. Winding-engine, 18-inch. Crushing-engine, 36-inch. Water-wheel, stamping, of 35 feet diameter. —

## SOLD IN 1864.

						£	s.	d.
Copper ore	...	...	...	...	for	1,694	15	9
Arsenic	...	...	...	...	"	20	0	0
						<hr/> £1,714 15 9 <hr/>		

The expenditure over receipts, from the beginning, amounts to about £20,000; in the year 1864, to about £1,200.

## CRIDDIS COPPER (LIMITED),

in the parish of Padstow, Cornwall. *Managing Director*, Mr. S. H. Armitage, 9, Dowgate Hill, London. *Local Director*, Mr. David Stickland. *Deputy Purser*, Mr. William Lewarne. *Owners*, Lanivet Charity Trustees. Dues, 1-15th. 35 men and 2 boys employed in the mine. Depth of the mine to adit 17 fathoms. Below adit, 10 fathoms. The draught-engine is a 40-inch, just completed. This mine was worked in the early part of the century, and gave dividends, the amount of which I cannot ascertain. The present Company commenced operations in January last, and are carrying them on in good earnest. The Manager is an active man and fully competent, from long actual employment in mines, to do the best for the Company. The main lodes, in direction, &c., resemble those of Levant, in St. Just, the product being grey copper ore, yielding 26 per cent. of copper (per assay made by Mr. James Davey, St. Austell). There are 2 lodes only that have been worked on, these are parallel, and 6 or 8 feet apart in the adit level. The lodes had been opened up by the ancients 2 miles in length.

## WEST MARTHA

(late Trehill Mine, previously Wheal Sheba), in Stokeclimsland, Cornwall, in 15,000 shares. *Purser*, Mr. John Wright, Stoke. *Manager*, Captain Henry Rickard, Trehill. *Mineral Owner*, Duke of Cornwall. Dues, 1-15th. Depth of mine, 50 fathoms (no adit). Rock, clay-slate. 4 men and 2 boys employed. No steam machinery. Water-wheel, winding and crushing, 36 feet by 3 feet. Water-wheel, winding, 18 feet by 2 feet. Water-wheel, pumping, 50 feet by 4 feet.

## MINERAL SOLD IN 1864.

						£	s.	d.
Copper ore	...	...	...	...	"	700	0	0

Working resumed in July, 1863. There is a small loss on the same, but hopes are entertained of increased returns in future.

# W A L L.

**TABLE.—*The productive value in Pounds Sterling.***

Name of Mine.	1863.							
				COPPER.		LEAD.		
	luc.	Quantity.	Value.	Quantity.	Value.			
	T. s. d.	Tons.	£ s. d.	T. C.				
South Caradon .....	...	5,846	52,069 9 6	...	...			
Holmbush.....	...	1,048	7,828 1 0	415 7	Not given.			
Wheal Trelawney ...	...	...	...	1,073 17	Not given.			
East Jane .....	...	...	...	...	...			
Wheal Ludcott .....	...	...	...	749 12	Not given.			
Wheal Mary Ann ...	...	...	...	844 13	Not given.			
Drakewalls .....	21 9 11	...	...	...	...			
Treweatha .....	...	...	...	105 4	...			
Redmoor .....	1 10 3	...	...	...	...			
East Caradon .....	...	6,081	34,155 19 3	...	...			
West Caradon.....	...	2,511	15,779 4 3	...	...			
Marke Valley .....	...	4,976	16,221 10 10	...	...			
Phoenix .....	5 2 9	5,733	20,316 15 2	...	...			
Craddock Moor .....	...	2,076	11,773 3 0	...	...			
Hingston Downs.....	...	2,454	8,141 5 7	...	...			
Gunnis Lake .....	...	284	1,485 3 6	...	...			
Great Wheal Martha	...	...	...	...	...			
Kelly Bray .....	...	937	3,921 15 6	...	...			
Wheal Edward .....	...	1,239	4,452 5 0	...	...			
Okel Tor .....	...	1,008	3,116 11 2	...	...			
Calstock Consols ...	...	144	396 8 6	...	...			
Hawkmoor .....	6 1 9	173	749 5 2	...	...			
Wheal Arthur.....	...	394	1,398 0 0	...	...			
Gonamena .....	...	...	...	...	...			
Trehill .....	...	...	...	...	...			
Great Tregune .....	...	...	...	...	...			
Great Treveddoe ...	9 10 4	...	...	...	...			
Wheal Mary Great	...	...	...	...	...			
Consols .....	...	...	...	...	...			
North Phoenix.....	...	...	31 10 0	...	...			
New Wheal Martha.	...	2,253	5,346 10 6	...	...			
New Cornish .....	...	92	309 7 2	...	...			
New Crow Hill .....	...	...	...	69 10	Not given.			
Goonzlon .....	6 5 7	8	44 12 0	...	...			
West Martha .....	...	103	165 16 6	...	...			
Herodsfoot .....	...	...	...	606 9	...			





## WHEAL IDA,

in St. Ive, Cornwall, in 6,000 shares. *Secretary*, Mr. H. G. Sharp, Poultry, London. *Manager*, Captain Harpur, Callington. Rock, clay-slate. Pumping-engine, 30-inch. No other steam machinery. Operations commenced in "virgin ground" about 12 months ago. Hitherto there have been no returns.

## WEST ROSEDOWN,

in the parish of Linkinhorne, Cornwall, in 1,000 shares. *Purser*, Mr. John Harding, Salisbury. *Manager*, Captain James Seccombe, Menheniot, near Liskeard. *Landowners*, Messrs. Mark Symons and Seccombe. Dues, 1-18th. Depth of adit, 30 fathoms; depth below adit, 42 fathoms. Rock, granite. Pumping-engine, 60-inch. Winding-engine, 24-inch. No mineral sold.

## WHEAL TRUSCOTT,

in Saint Stephens, by Launceston, Cornwall. *Purser*, Mr. C. Wescomb, Exeter. *Manager*, Captain John Nicholls, Camborne. This new mine is situated about 3 miles westward from the town of Launceston, in the lands of Messrs. Coode and others. The operations, at present, are judiciously confined to the driving an adit, by 6 men, to intersect all the lodes; one of which (copper) yields a sample so rich as to raise the shares already to a premium in the market of £2 each. It may be that this young mine will become the nucleus of a group of mines in that unexplored locality. If so, Launceston will prosper beyond any precedent.

## WHEAL CARADON,

in St. Ive, Cornwall, in 4,000 shares. *Secretary*, Mr. A. Lilly, Bridgewater. *Manager*, Mr. Francis Pryor, Redruth. Captain Johns, *Agent*. *Landowner*, Mr. Nottle, Liskeard. Dues, 1-18th. Depth of adit, 20 fathoms; depth below, 70 fathoms. Rocks, clay-slate and elvan. 34 men, 1 female, and 2 boys employed. Pumping-engine, 50-inch. The operations commenced about 7 years ago; but hitherto there have been no returns of mineral; however, the prospects at present are cheering.

# DEVONSHIRE MINES.

## CHAPTER IV.

### DEVON GREAT CONSOLS,

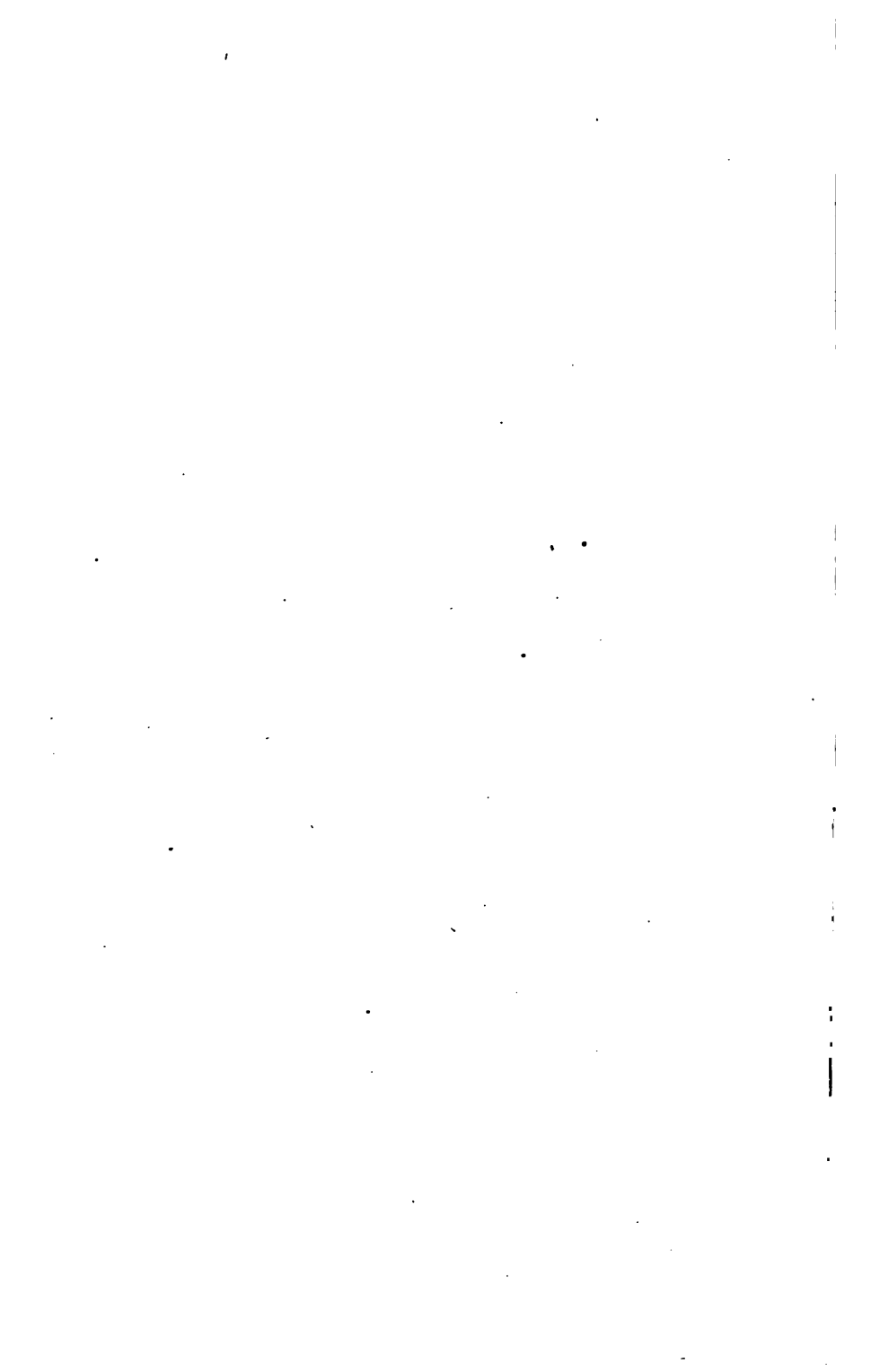
is situated in the parish of Tavistock. In 1844 six gentlemen took from the Duke of Bedford the sett or lease of the mines now known as the Devon Great Consolidated Mines, for 21 years, at a royalty of 1-15 dues, to be increased to 1-12 so soon as a profit of £20,000 had been realised. The property was divided into 1,024 shares, and £1 paid on each share. In the month of November, in the same year, a rich copper lode was cut, and the profit paid working expenses without a call. The lodes proved so rich, that in the six years between the years 1844 and 1850, the Company extracted and sold nearly 90,000 tons of copper ore, for which they received £300,000, after paying all expenses. The Duke of Bedford received, out of the above sum, £44,000 for royalties, or dues, while the shareholders received about £207,000, or more than £200 per share on £1 paid. No more was "called" for, the £1 per share had been sufficient, and the six years dividends on £1,024 paid, amounted to more than £200,000; an annual average dividend of £35 on each share, is equivalent to £36,000 per cent. per annum. Such a rate of profit speedily and greatly affected the market value of the shares.

The mine embraces the setts of Wheal Maria, Wheal Fanny, Wheal Anna Maria, Wheal Josiah and Wheal Emma.

Depth, 212 fathoms. Employed, 861 men, 220 females, and 203 boys (total, 1,284). 32 water-wheels, viz.—2 pumping from underground, each 40-feet diameter by 12-feet breast; 1 pumping from underground, 30-feet diameter by 10-feet breast; 1 ditto, 30-feet ditto by 8-feet breast; 1 ditto, 50-feet diameter by 4-feet breast; 1 ditto from the river Tamar to supply condensing water to engine; water for dressing, &c. 1, 30-feet by 16-feet breast, and others of smaller sizes applied to various purposes throughout the mine. Steam engines at work, 7, viz.—1 pumping 40-inch cylinder, 1 winding 30-inch, 1 winding 24-inch, 1 winding 22-inch, 2 crushing, each 30-inch; 1 winding for lowering ores, and hauling up coal, timber, &c., 30-inch cylinder.

This Company is a rare specimen of mining success. On an outlay of £1 per 1,024th share, the Company have received £962 per share, amounting to nearly one million sterling in the whole! They have paid in royalties to the Duke of Bedford £210,000; also £20,000 for new lease, including additional ground eastward





from their original extent. They have also paid him £2,052 for land destroyed. The royalty in 1864 was £11,219 18s. 1d.

These mines have continued equally productive up to the present time, as will be seen from the following official particulars:—

## Dr.

To 1st March in each year.	Copper Ore sold.	Amount realized, including carriage.	Other Credits.	Total.
	Tons. cwt. qrs.	£ s. d.	£ s. d.	£ s. d.
1845	382 1 2	4,313 19 5	1,024 0 0	5,337 19 5
1846	12,292 10 2	116,068 15 0	2,436 19 11	118,505 14 11
1847	14,398 9 0	96,610 3 11	3,252 4 2	99,862 8 1
1848	14,413 6 3	102,933 7 7	3,883 10 9	106,816 18 4
1849	16,580 17 2	101,031 13 1	1,472 17 8	102,504 10 1
1850	15,431 18 0	104,554 18 6	619 19 7	105,174 18 9
1851	17,290 15 0	117,407 14 6	723 14 6	118,131 9 9
1852	18,946 18 0	118,334 2 9	601 7 0	118,935 9 0
1853	20,886 14 3	147,646 10 0	929 14 0	148,576 4 0
1854	24,378 19 2	153,837 0 2	1,586 8 11	155,423 9 1
1855	22,926 4 1	152,489 9 5	875 2 0	153,364 11 5
1856	23,922 19 2	140,843 11 9	1,054 6 9	141,897 18 6
1857	28,836 9 1	159,432 7 9	1,465 6 5	160,897 14 2
1858	25,172 13 3	138,356 15 1	2,074 2 7	140,430 17 8
1859	23,551 6 3	119,947 8 11	11,860 18 6	131,358 7 5
1860	22,889 2 1	115,285 8 7	3,598 2 6	118,883 11 1
1861	21,833 5 2	108,365 14 9	2,376 3 1	110,741 17 10
1862	20,855 6 2	102,330 0 4	1,445 19 8	104,776 0 0
1863	24,622 5 3	118,479 9 7	1,666 6 5	120,145 16 0
1864	26,834 7 2	130,175 7 8	2,034 15 6	132,210 3 2
1865	25,786 3 0	134,785 19 2	3,887 13 4	138,668 12 6
				2,529,659 11 2
				Balance in hand brought down. £16,057 7 2

## Cr.

To 1st March in each year.	Mine's Cost.	Dues on Ore.	Other Expenses.	Dividends paid.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1845	2,605 2 8	...	7 1 3	...	2,612 3 1
1846	30,590 8 4	8,321 15 6	6,168 14 1	72,704 0 0	117,769 17 11
1847	49,109 12 5	7,189 0 11	15,377 0 0	25,600 0 0	97,275 13 4
1848	57,084 11 6	7,623 9 5	15,600 13 7	15,204 16 4	95,531 10 10
1849	51,809 10 9	7,628 0 11	14,242 2 8	30,875 8 8	104,554 18 0
1850	49,897 7 1	7,906 5 9	11,682 15 1	24,304 0 0	103,790 7 11
1851	52,509 1 8	8,960 18 1	12,343 8 10	43,008 0 0	116,821 8 7
1852	51,980 19 10	9,027 3 3	12,605 3 8	39,926 0 0	113,499 6 9
1853	68,268 17 4	10,966 8 5	12,991 13 11	49,661 0 0	141,890 19 8
1854	76,115 3 7	12,117 1 4	15,268 5 5	64,512 0 0	167,012 10 4
1855	64,861 19 11	11,685 13 0	14,683 7 9	58,368 0 0	149,609 0 8
1856	63,022 12 7	10,769 19 4	12,991 2 1	56,320 0 0	143,103 14 0
1857	61,776 18 7	11,625 6 2	10,663 0 5	64,512 0 0	148,577 5 2
1858	53,387 10 1	11,376 16 2	22,447 14 0	61,440 0 0	148,652 3 0
1859	47,572 12 4	9,557 4 6	26,546 6 11	45,066 0 0	128,732 3 9
1860	50,083 19 0	9,287 11 7	18,780 7 1	48,128 0 0	126,229 17 8
1861	43,349 2 9	9,117 4 5	11,052 5 10	47,104 0 0	110,622 13 0
1862	41,595 0 5	8,521 6 3	8,922 13 8	44,032 0 0	103,071 0 4
1863	42,396 0 2	9,596 13 3	10,256 8 7	55,296 0 0	117,542 2 0
1864	51,419 13 6	10,503 10 11	14,218 17 7	56,320 0 0	132,462 8 0
1865	56,310 1 11	11,219 10 1	12,923 1 11	63,498 0 0	143,941 1 11
					2,513,602 4 0
					16,057 7 2
					Balance in hand carried down. £2,529,659 11 2

Notwithstanding the enormous returns already derived, the reserves are stated to be very considerable, warranting a belief that dividends may be expected for many years to come. The present price per share is about £600—10 years purchase on last year's dividends.

The *Directors* are William Alexander Thomas (*Chairman*), P. E. Blakeway, Thomas Morris, and John Thomas, Esquires. The *Auditors* are Messrs. J. Deane Browne and Henry Hooper. The *Consulting Engineer* is Josiah H. Hitchins, Esq. The *Solicitor*, R. W. Childs, Esq. *Secretary*, Mr. A. Allen. Offices, Gresham House, London.

### THE DEVON GREAT MARIA CONSOLIDATED COPPER MINING COMPANY (LIMITED),

in Lamerton, Devon, in 5,000 shares. *Directors*, Sir Atwell Lake, Bart, C. J. Carttar, Esq., Coroner for Kent, J. P. Johnstone, Esq., J. P. Frarstown House, County Leitrim, J. H. Tilston, Esq., Brigworth, Edward Chas. Lea, Esq. (Messrs. Mos, Lea and Co., merchants), Water Lane, City, Lieut.-Colonel Ouseley, jun., United Service Club. *Bankers*, the Metropolitan and Provincial. *Local Manager*, Captain Richards. Offices, 224 & 225 Gresham House, Old Broad Street, London.

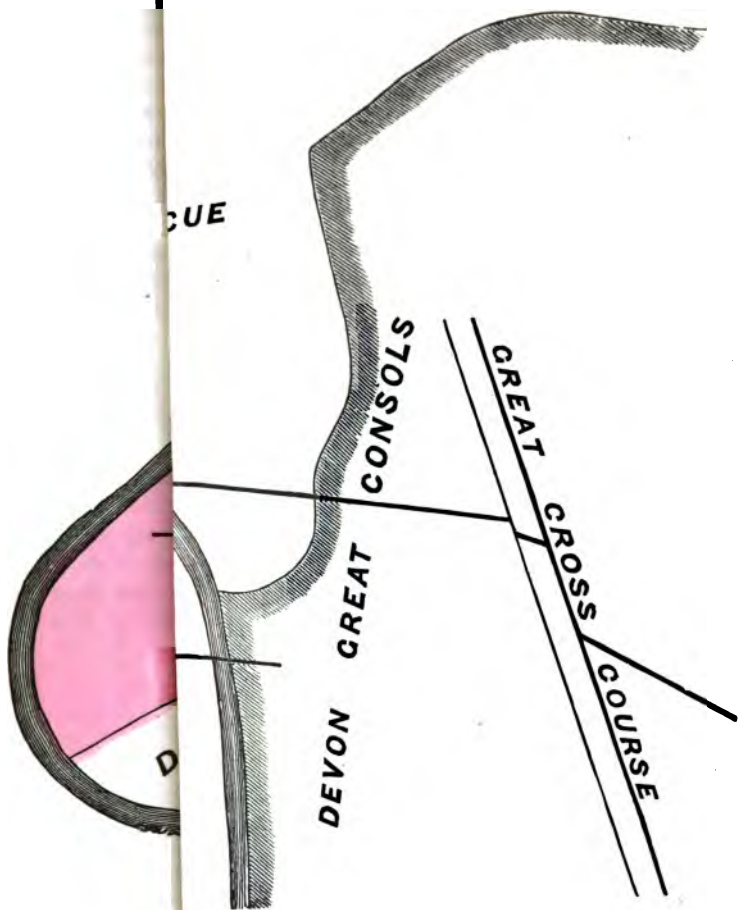
This property has been lately brought under mining operations. It is situated immediately to the west of the Devon Great Consols, and upon the same lodes. There has not been sufficient time thoroughly to explore these lodes, but enough has been done to realise all the preliminary indications of rich and large deposits. The best way to present the position and prospects of this mine to my readers, is to publish the reports of J. H. Hitchins, Esq., discoverer and consulting engineer of the Devon Great Consols, and Captain James Richards, the manager.

### THE DEVONSHIRE GREAT CONSOLIDATED COPPER MINING COMPANY, TAVISTOCK.

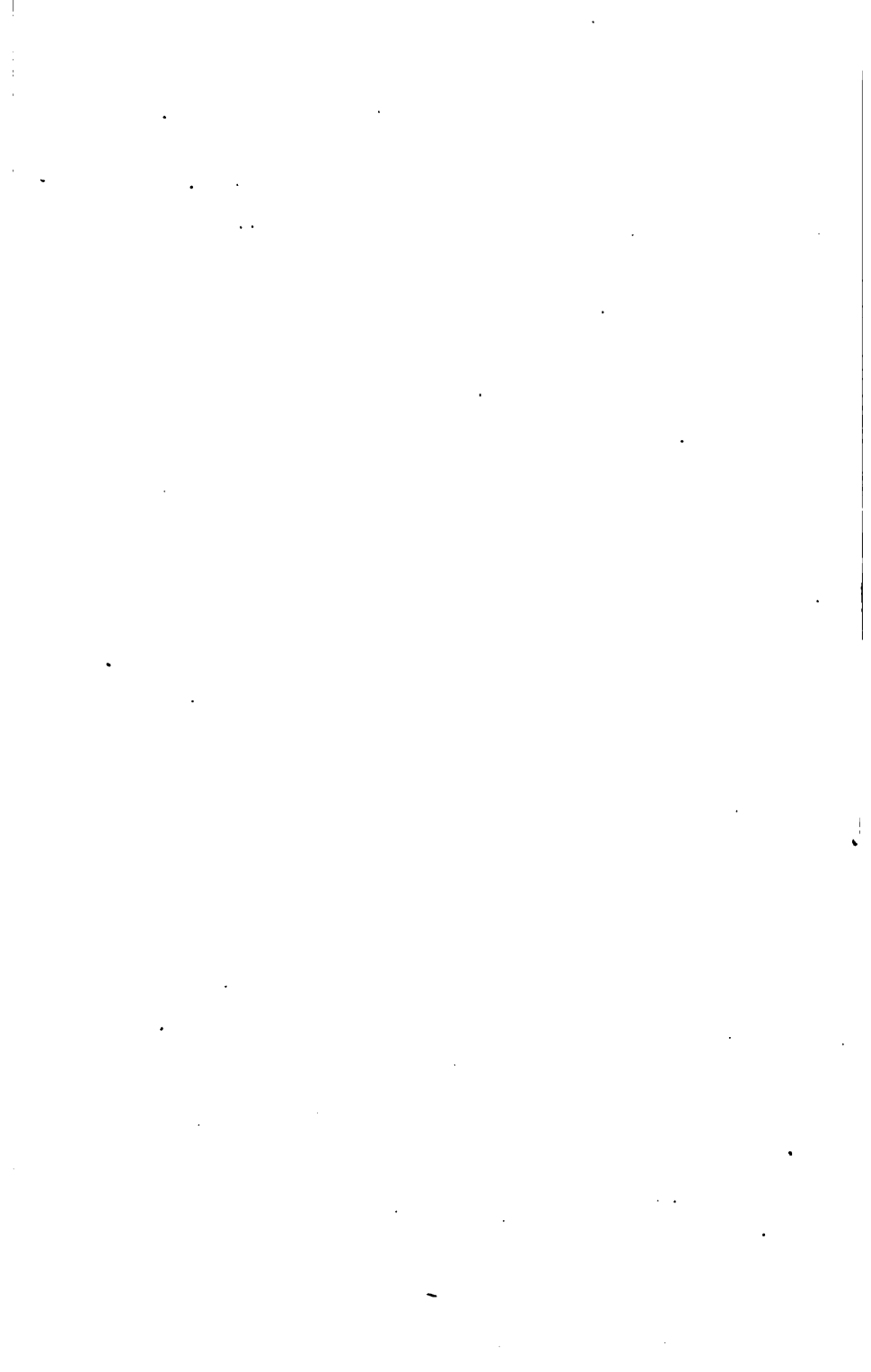
Agreeably with your request I have to-day carefully inspected the "Devon Great Maria Mine," situate in the parish of Lamerton, county of Devon, and which is in a direct line to the west of the Devon Great Consols Mines, and the lodes of the latter mines in all probability pass through the entire length of this property, and which is nothing short of 300 fathoms. The country is also the mineral bearing strata of the district.

There are several lodes within the limits of this sett, four of which have been partially operated upon, and the first, known as the north lode, deserves particular attention. On this lode an

ROUGH GREAT CONSOLS LODES.







adit level has been driven about 60 fathoms, proving where cut through at intervals to be from 4 to 8 feet wide, composed of fine caple, quartz, gossan, mundic in abundance, prian and ore, altogether most strongly indicating the production of large quantities of mineral.

Some 60 fathoms to the south of the former, another lode is laid open on the back in the usual way by costeaning, which is also a masterly one (4 and 6 feet wide), and from which stones containing rich ore have been obtained, and this lode is in all respects an exceedingly promising one; and there are two cross-courses, or north and south lodes, which add considerably to the chances of success.

A new engine-shaft of sufficient size for all purposes required has been commenced, which is intended to intersect the north lode at about 50 fathoms deep. It is down 8 fathoms, and as it is well situated for the full development of this part of the mine, I would recommend the erection of an engine of not less than 60-inch cylinder, and that the shaft be continued as rapidly as the nature of the work will admit.

A trial shaft has been sunk from the surface to the depth of 50 fathoms, which, as soon as the new workings are communicated therewith, will become available for the purposes of hauling and ventilation; this, therefore, may be looked upon as so much valuable work done.

From the close proximity of this mine to the Devon Great Consols, the similarity of the country, the cross-courses passing through it, and the size and character of the lodes, I am led to form a most favourable opinion of this property, and if fairly developed there can be but little doubt that a good and profitable mine will be the result.

I am, Sir,

Yours obediently,

JAMES RICHARDS.

## DEVON GREAT MARIA.

It is now many years since I first became acquainted with this undoubtedly very valuable property, and brought it under my examination, which led to my doing so many times afterwards, having in view its acquirement for mining purposes should circumstances favour it, which however was never my good fortune. I have oftentimes since reviewed and reflected on what came under my observation on those occasions, and it affords me much satisfaction to be able to say (as it may do good) that the favourable opinion I have all along entertained and expressed to so many people of the value of this property remains unchanged.

Notwithstanding much that has always been said in favour of the North lode in the adit level which has been driven on for a great many fathoms, and touching which Capt. JAMES RICHARDS' report supplies enough of good guiding information, the exceedingly promising character of the next South lode I saw opened out many years since, makes me say with much certainty that great results would be realised by its being brought into operation, and that too at no great depth. Although a good exposition was made of this lode it was nothing like a sufficiently deep trial to justify the expectation that the discovery of a profitably productive lode would be the result, although such a feeling was indulged in. The appearances and prospects opened out were however very encouraging, and why this lode has not been effectually tried I am completely at a loss to understand. It has beyond a doubt been suffering an undeserved fate. At the time that I saw it last, although only a few fathoms below the surface at the deepest, it was from 5 to 6 feet wide, I think, showing altogether a very strong, masterly quartzose, gossany "back" (surface outcrop), and besides which good stones of ore were to be broken from it.

From what I have just said it cannot be otherwise than understood that I entertain a very favourable opinion of this lode, which I certainly do, believing also that it would begin very soon to yield good produce, and therefore I should sink a trial shaft in this part of the property in the fullest confidence that it would result in great and early success.

Again, on the last occasion of my visiting this property, I proceeded therefrom to the justly celebrated Devon Great Consols, (also at this moment the richest copper mines in the kingdom), carefully looking over the intermediate ground, taking various observations from different points of view, for ascertaining the general run of the lodes as proved by the actual workings on them in both the properties in question, and I was more than ever convinced of the correctness of the conclusion I came to many years since, that "Lamerhoo" (this property), is as directly on the general bearing line of the Devon Great Consols lodes as possible. In addition to which, there is much justifiable satisfaction in the fact, that its rock formation is the same in which the extraordinarily great results of the far-famed mines just mentioned have been realised. I cannot but properly value my reputation as the discoverer, projector, and consulting engineer of those wonderful mines, the rapid progression, brilliant development, and unequalled results of which need no comment. The dividends paid amount to £945,152 which is £923 per share. The shares of the Company are 1,024, present price from £590 to £600, and the only call ever made £1 per share. The par-

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ticular formation referred to (the transition slate) is of a highly crystalline character, and has proved one of the principal repositories of metallic ores throughout the world. It is clearly the true copper ore bearing rock of this rich mining district, it being undeniably true that in none of the other alternating and differently constituted rocks, have any regularly continuous or profitably productive courses of ore been realised, that is to the East of the River Tamar in Devonshire. The transition slate in question is indeed no other than the remarkably metalliferous "Killas" of Devon and Cornwall. As I have before frequently remarked, we must keep an eye to such things (elementary conditions), before undertaking responsible and costly mining trials, it being now more universally acknowledged than formerly, that metallic lodes depend on the rocks with which they are associated for their enrichment and productiveness.

Judging then from the few foregoing remarks and observations, there is no other inference admitted than that I believe "Devon Great Maria" will result in a permanently profitable investment if carried out in a judiciously energetic manner, under the advice and direction of a well qualified superintendent, by which I mean a sufficiently well experienced mining agent, possessing a good discrimination and sound practical judgment.

J. H. HITCHINS,  
*Consulting Mining Engineer to the*  
*"Devon Great Consols."*

## CHAPTER V.

### BOTALLACK.

The Botallack mine is probably the most remarkable in the world. It is so in every way—the surface works in their position and character, the underground operations, the capital employed, and the results.

The geological and mineralogical features, both general and peculiar, of the neighbourhood, are interesting to the man of science, and even to the superficial observer.

It has been before observed as an interesting law laid down by the Great Architect of the Universe in the constitution of this sphere, that the oldest of all the rocks, and those next in formation, were so composed that they segregated the metals and collected them into lodes.

The character of the rocks and lodes in the vicinity seems to throw some light upon the electrical history of our planet. The currents did not travel at the remote periods of the formation of these rocks and lodes as they now do. They then ran 35 degrees further to the eastward of north and westward of south. The lodes lay south-east and north-west.

The granite of the whole district is a disturbed granite. This is proved by the fact that the lodes which are formed in the granite run into the clay-slate—a formation so much later. Those which in the granite bear tin, in the clay-slate bear copper. There must, therefore, have taken place a change, the philosophy of which we do not comprehend, either by the raising of the granite or by the operation of some unknown force at that period, for the ordinary geological law is that slate resting upon undisturbed granite and greenstone contains lead.

The power which could have raised from such vast depths the ponderous granite, scattering the thick beds of clay-slate in all directions, must strike the mind with awe and reverence; few things can give a more elevated idea of omnipotence. The sea, in its vastness, its might in the storm, its beauty in the calm; the volcano pouring forth the tide of fiery lava from its breast; the tempest in the presence of which the powers of earth and ocean are so feeble, seem as nothing compared with the upheaving force which raised these granite masses from their stupendous depths. The students of creation and of Divine Providence may here join

... .. by one set of adventurers, £300,000





hands and find an equal interest, for the display of mighty forces thus made is associated with providential care for man, as attested by all the phenomena of the region which are associated with the productions of metals, so useful, so essential, to the progress of civilisation.

The Botallack mine itself is a wonder, showing the enterprise of man, and his marvellous control over the earth on which he moves.

The curious calculation has been made that there is rock enough dug out of the mine to form a wall a mile long and four hundred yards in height; that the money required to excavate and remove the rock would build a wall of the same length more than three miles in height; and that the cost of the excavation of the mine would exceed half a million sterling. Startling as these computations are, a visit to Botallack would cause the incredulity of the most incredulous to yield.

The works are of prodigious extent, and required astonishing ingenuity and labour in all their progress. The engines rest upon granite foundations to a certain depth where extending beneath the sea, clay-slate or killas, the carrig-glas or bluestone of the Cornish Celts.

The engine shaft was sunk perpendicularly to a depth of 200 fathoms from the cliff which has battled so many storms, and which still turns its haughty brow to the boisterous Atlantic, as if defying its power.

The mine is wrought under the ocean for a distance of half-a-mile. Tunnels seven feet high and four feet wide were cut into the lode of copper. The ore had to travel all the distance along the base, and perpendicular of a right angled triangle, of the dimensions already stated. This consumed time, which to the miner as to those who toil above ground is money, and there were the wear and tear of material, and the expenditure of human labour. The engineers constructed a shaft which should form the hypotenuse of that right angled triangle. The accompanying map will enable the reader to form an accurate conception of this great construction.

The wood rod from the end or "nose" of the beam to the bottom of the engine shaft is more than a quarter of a mile in length.

How it enhances one's estimate of human science and human perseverance to conceive of these mighty works carried on below the ocean itself! The formation of a tunnel under the bed of the Thames was regarded as "one of the wonders of the world," but how that enterprise fades away from the imagination in the presence of *a mine beneath the ocean*. These under ocean beds are uncommonly rich. By one set of adventurers, £300,000

were realised. All the accounts given by miners and mineralogists who have descended to the levels, represent the sight as wonderful, and the treasures of copper ore as very great.

The copper of this mine is often a dull, heavy bell-metal colour, and the miners call it horseflesh copper ore; it also appears to form small bladders on the surface of the stone, and hence the miners call it blistered ore. The mine is now paying about 30 per cent. upon the capital, and although at a considerable depth under the sea, the mine is still considered a healthy investment, and worthy of the capital of any person investing in mines. The dividends declared have been £480 15s. per share, or £100,000, to the present holders. The capital expended to obtain these results was about £20,000. The mine is divided into 200 parts, or shares. Geologically, mineralogically, and commercially considered, and also as a great and scientific work, the Botallack mine is thus worthy of the greatest interest.

The site regarded simply in itself, or regarded in connection with the exterior works is very attractive. It is on a high beetling cliff, which towers above the sea many feet, and seems to bend over it as if receiving at its feet the homage of every billow. Looked upon from the shore, the scene presented rather awes than animates. One wonders that aught but the eagle should find a home upon the storm-stricken height. Yet, as the accompanying engraving shows, there are buildings, which are necessarily of great strength, to resist the raging winds upon that coast.

Human beings may be seen guiding mules along dizzy tracks, or climbing ladders, from which to make a false step the toiling climber would be precipitated to destruction. It makes the brain of the beholder reel to witness such scenes of peril; but these brave Cornish men make their way with firm step up the steep ladder, and along the unequal paths of thin rugged ascent. Accidents are more common on our best managed lines of railway, or even in the city from vehicles, than at the Botallack mine.

From whatever point of view the cliff is contemplated, the works erected upon it, and the numerous apparatus associated with them, strike the beholder with surprise.

It is astonishing that for many years little interest was taken in this mine, either from its picturesque site, its stupendous works, or its gorgeous worth, except amongst miners and persons accustomed to invest in mines. But now the Botallack must be visited to be in the fashion. Some time ago, Prince Alfred set the taste by visiting its subterranean chambers. More lately the Prince and Princess of Wales honoured themselves, and delighted their loyal Cornish fellow-subjects by a stately visit.

In July, 1865, the Prince and Princess, in their yacht, sailed around the southern coast, landing at the most interesting places in their Duchy of Cornwall. From Penzance they made an excursion to Botallack. The drive was attended by many demonstrations of joy on the part of the people, until the royal pair landed at the "account-house," in which the business of the mine is managed. It was a beautiful sight to witness. Decorations at all suitable spots presented their attractions, and the people crowded about the "account-house," and grouped themselves upon the cliffs, many occupying positions of appalling danger.

In the "account-house," the royal party, which was numerous, apparelled themselves in a manner suitable for the descent. The Princess came out most becomingly arrayed in a fine white flannel cloak, which completely enveloped her, and which was trimmed at the neck with blue riband. A white straw hat, having also a band of blue riband around it, completed her outward costume. The Duchess of Sutherland, Lady Vivian, Lady de Grey, Lady E. St. Aubyn, and Lady Audrey Townshend, were similarly attired. The Prince, the Duke of Sutherland, the Duke of St. Albans, and the other noblemen and gentlemen of the party, had on white flannel tunics, white trousers, and low white hats. Assembled together they looked very much like a group of devotees bent upon a pilgrimage to some holy shrine. At the door of the "account-house" the Princess and the Duchess of Sutherland took their seats in a small donkey-carriage, and were drawn very gently down the rugged way leading to their destination, all the rest of the party walking. Having been eventually conducted to the platform, they descended through the diagonal shaft before described.

From the platform on which they then stood, a narrow way, constructed of timber, like a miniature railway, ran down to the entrance of the mine, and thence on deep into the bowels of the earth. On this way a low car, covered with crimson cloth fringed with orange, was placed, with grooves to fit the rails. To the back of the car a stout metallic rope, which could be let out or drawn up at pleasure by means of the machinery higher up the cliff, was attached. The Prince and Princess, together with the Countess de Grey and Mr. and Lady Elizabeth St. Aubyn, having taken their seats in this car, the rope was gradually let go, and they glided gently down the shaft through the doorway, each of the party being provided with a lighted candle. When the Prince and Princess had got to the bottom, the car was pulled up by means of the rope, and the Duke and Duchess of Sutherland and other members of the royal party descended into the mine, the process being repeated until the whole party had

got to the bottom. The royal party remained one hour below, and on emerging were received with shouts of applause from the multitude who awaited their ascent.

This incident produced great excitement at St. Just, Penzance, Marazion, Falmouth, and in all the mining districts in that part of Cornwall. On the return of the royal party to Penzance they were received with renewed acclamations, Mount's Bay gleamed with illuminations, bonfires flamed up from every hill, and St. Michael's Mount was radiant, as if conscious of all its old and present honours, while their Royal Highnesses were the guests of Mr. and Lady St. Aubyn.

## CHAPTER VI.

### MINING AS A LEGITIMATE INVESTMENT.

THERE is scarcely any business in which legitimate investment requites the capitalist, that injury is not inflicted by illegitimate transactions; but there are some forms of investment which, for reasons peculiar to them, sustain more injury than others. In most speculations, the mere speculators, whose rashness does such mischief, have to contend with merchants or other professional persons who are up to their tricks, and know how to guard against personal loss in the competition; but in Mining it is otherwise. Mining capitalists are seldom acquainted with the *modus operandi* on the market. They know nothing of how the market is rigged by professional speculators. General investors are not, and cannot be, in the way of perceiving how "Bulls and Bears" manage one another, the stock they inflate or depreciate, and the victims of their recklessness or scheming. Hence, when effects are produced for which the honest investor cannot account, he regards them as the necessary consequences of intrinsic causes, and is elated unduly or depressed improperly. And as in the long run bulling and bearing can have but one issue, that of fictitious value in the market, and loss to honest adventurers who commit themselves to the chances which these people toss about as a conjurer his balls, an opinion is formed of mining and mines, in keeping with the sudden transition thus created. Hence, go where we will, amongst persons of property who seek some more remunerative outlet for their money than the funds, the complaint is heard, that mining is uncertain and unsafe, that it is a species of commercial empyricism, of random adventure, unsuitable to the provident and honest. This judgment is not formed from the data connected with quiet, solid, real investment, but from rumour or personal loss, altogether the work of those wild beasts the Bulls and the Bears. It is a specimen of what logicians call *non causa pro causa*. The market operations of those who force up or force down prices are mistaken for causes at work in the variable nature of the property in which the capital of the complainants or their friends have been embarked. These injured and innocuous persons are not aware that a good progressive mine goes on uninfluenced by Bulls or

Bears, as the sun continues its track in the heavens, heedless of the storms that sweep over the earth above which it shines. But as in the case of the illustration, although the sun itself is not less bright, yet on a stormy day its light may be obscured to the beholder by the clouds that roll above him, or the showers that fall, so is it in the case of the thing illustrated, the good mine which is no better nor worse for all that speculative dexterity or malversation can perform, is obscured as to its real worth in the eyes of many, because of the change and tumult elsewhere. There can be no doubt that the real condition of affairs will eventually be understood by the investing public.

Our Latin exercises taught us to repeat with school-boy philosophy, what riper years confirm, "*experientia docet*;" but Dr. Benjamin Franklin added much more wisdom to the aphorism when he wrote, "Experience keeps a dear school; and fools will learn in no other." But we may add still, that to many who are *not* fools it is difficult to learn in any other. Events are placed beyond the range of their observation. They have no opportunity of looking behind the scene which conceals the real character of the performances of those great actors the Bulls and the Bears. These men, like other actors, are only formidable or fascinating in their masks. Strip from them their vizors, and they have very ordinary countenances, neither to be feared nor loved, but rather answer to the criticism which a German officer once passed upon a supposed beauty—"She have a face that say nothing." Now investors have really the means of discriminating between investment and gambling in mining shares. Much has been written upon the subject. The Author of this work, who is wholly engaged with mines of present or progressive value, has written very much on this subject. There are agents and brokers who never meddle in mere speculative stock. The counsel of such men is safe and should be sought. Let the investor take no notice of the ups and downs of the mere speculative market, where a stake is put upon the wheel of fortune, and wheels around and around as chance and the breath of public credulity may impel. But let the *bonâ fide* investor direct his attention to the value of the metal which a mine produces, and inquire into the history of the produce, and the character of the present workings of that mine; and he will find means of employing his capital, so excellent as nothing but mining could supply. The mines which have been taken up without fuss or jobbing; which have been carried on intelligently, industriously, and with purpose, are happily numerous. Any investor who investigates the list, will soon come to the conclusion that business in mines and jobbing in mining shares are very different things; as different as a real rent-roll, and a roll upon paper

where the rent is not paid. The fable of the dog who let go the bone to snap the shadow, might be reperused with advantage by some who have a hankering after mining shares, but are undecided what to do, and are too likely to let the opportunity pass from them of realising property in a solid mine, and snatching at some shares which are bandied to and fro in the market in the interest of the jobbers.

Every year the mining chart is becoming fuller, and the mines discovered are found to be richer. At no period in the history of mining was the prospect of the *bond fide* investor as good, and the chances of the mere gambler in shares more hazardous. It is therefore proper to urge that this great branch of industry should be taken up with the purpose of legitimate investment and legitimate venture only, as properly belongs to every business.



## CHAPTER VII.

### CONCLUDING OBSERVATIONS.

FROM the accounts given in the foregoing chapters of mines and mining, it must strike every impartial observer as extraordinary, that investment in British mines should not be more popular. The reason of this is however easily afforded. Foreign adventures have been all the vogue with English capitalists, and these have so terribly and so frequently failed as to extend to English mining enterprise the prejudice which they created.

It surprises some of the best commercial men and political economists that English capitalists are so eager to lay hold of a foreign speculation. What nation is it that has not got into debt to individual Englishmen, and this continues although one country after another has repudiated. Spain, the States of America which repudiated, Turkey, &c., have as deliberately robbed their English creditors as ever any man was robbed by the fraud of an individual, yet any nation requiring a loan would have no difficulty in raising it in England.

Foreign mining schemes have been frequently represented as under the especial patronage of their governments, when, in fact, the only interest taken in them by those governments was for the purpose of in some form, under some pretence, extorting money from the capitalists.

Even such foreign mines as have been successful, are not to be compared with our English mining enterprises for results. How many foreign mines can compete with the Devon Great Consols, the Botallack, &c.

I could point out fifty mines where the returns have passed the most sanguine expectations of the speculators. A few of these will be more especially pointed out to the reader, at the close of these observations.

There is a more healthy tone towards British mining than formerly. Capital has been withdrawn from foreign mines, and invested in mines in Cornwall, Devon, and Wales.

I am convinced that this will grow upon the public, and that British mines will yet have a fair share of the public patronage. The improved feeling towards British mining adventures has arisen from the extension of geological and mineralogical know-

ledge, and from statistical records of what has been accomplished by British Mining. A previous work of mine on the mines of Cornwall and Devon, I am happy to know, passed into the hands of many persons whose minds were altered by the perusal of honest statements, and the consideration of indisputable facts.

The mining department in the Museum of Practical Geology, Piccadilly, has been useful to the same end, and Mr. Hunt's annual memoirs, published under the sanction of the Lords of the Treasury, are replete with information of the most instructive nature.

It is commonly objected to any argument in favour of such enterprises, that they are hazardous and speculative. The reply is that they are not more speculative than shipping or commercial pursuits, or even than many cultivations. All business is speculation. Manufacturers produce, speculating upon a profitable demand; merchants buy, expecting to sell with advantage. There is risk in the production, the purchase, the sale, the reimbursement. Now there are various features of the mining trade, so to call it, which are in its favour, and if once the ore is discovered, render the conduct of the business safer than in almost any other case; and after all, the rates of profit exceed that of commercial undertakings, and sometimes obtain a proportion far in excess of anything known in commerce or manufactures. Fortunes the most colossal have been made. Upon a single pound investment, hundreds have been returned. It is notorious that railways, canals, the funds, and even banks never make such returns as are made by many British mines. Indeed, the average profits of most of these undertakings are far below those of the humblest dividend mines.

The value of metals yielded by the two great western counties for the last three years amounts to millions sterling!

The superior education and scientific attainments of mining engineers and mining captains, makes mining by no means the doubtful affair it used to be, and must inspire confidence in the intelligent investing public. There are no branches of science which bear upon mining geology, mineralogy, chemistry, statics, hydrostatics, &c., which the mining engineer does not study. With these facts, and the certainty that the laws of geometry or of geology will not mislead, and that in their application the work of the mining engineer is definite and determinate, investors have no grounds for the apprehensions which were so common when mining discovery was mere haphazard, and mining operations mere unskilful plodding.

I have illustrated this work with a map of Cornwall, showing the various districts into which the county is divided, with the population of each; as also a large map of the county, divided

into four sections, which are drawn on a scale of three miles to an inch, and coloured for geological discrimination from the Ordnance Survey; and are printed in three colours, red, black, and blue; all the mining districts in the county are distinctly shown, with the height of the principal hills, and the distance of the various towns from London. And having previously at great labour, trouble, and expense, prepared maps of the principal mining districts, I have had them reduced to adapt them to this publication. The district maps are calculated to guide adventurers in the selection of shares in undertakings embodying the elements of success; they contain the boundary line of every mine, and distinguish the lodes, cross-courses, and elvan courses, traversing each; they also show the geological position of every sett, an important feature in the metalliferous districts of Cornwall. The mines are described under four heads, viz.—Dividend mines; mines returning ores; progressive mines; mines abandoned; thus presenting for the guidance of the purchaser all the information required to aid his judgment, by showing the real position of the property in which he may be inclined to make an investment. An important and interesting feature is also shown by these maps—that nine-tenths of the rich mines of Cornwall and Devon, are on or near the junction of granite and slate, or slate and greenstone. This convincing fact should at all times guide adventurers in selecting mines for investment, and this can be ascertained by a reference to, and inspection of these maps, which contain about 300 mines, amongst which will be found some of the oldest and richest in Cornwall.

I have, in the foregoing chapters, given the most minute detail of the mines of Cornwall, such as will enable any attentive investor to make a careful and judicious selection. I, of course, have abstained from expressing an opinion to this effect concerning any mine.

It is in the early stages of a mine's development that investment can most profitably be made. It is by good progressive mines that the largest profits will be realised. Care and judgment must be used, and the opinion of professional judges taken, and in thus acting rarely will the investor be disappointed. It is always judicious for the capitalist to visit the mine accompanied by an agent thoroughly competent, or to send thither one upon whom he can rely. I always refuse to give conjectural advice, but am ready to visit a mine, and give a faithful, as I am competent to pronounce a correct, opinion.

The following list of successful mines will exhibit to the reader a fair picture of what may be accomplished by judicious mining investments:—

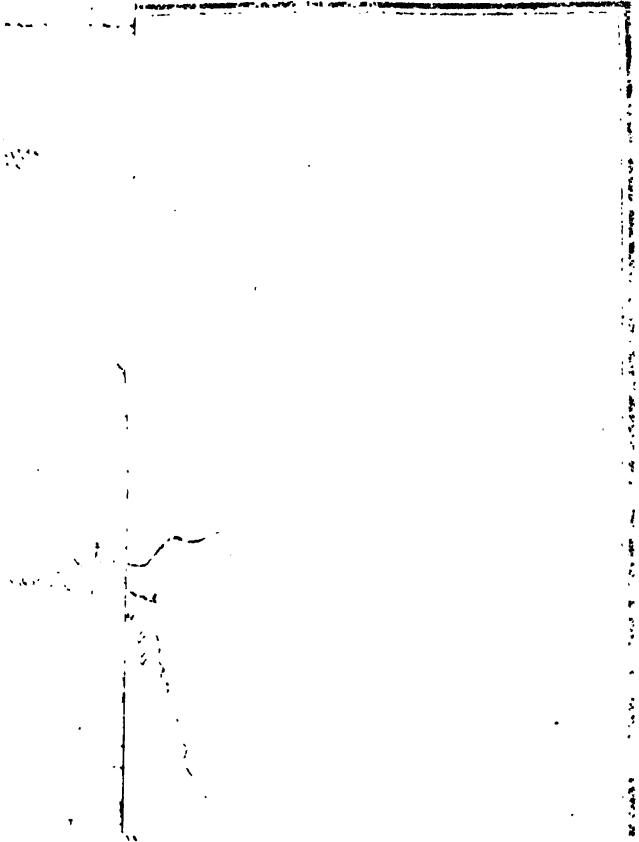
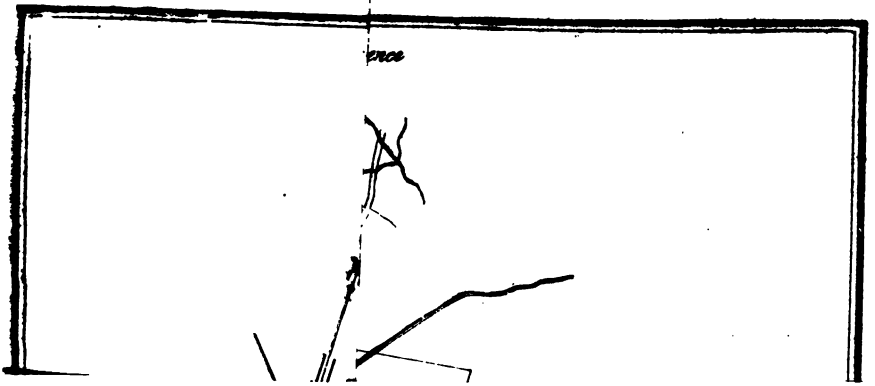
Name of Mine.	Outlay.			Dividends.			Market Value.
	£	s.	d.	£	s.	d.	£
Tresavean... ..	4,080	0	0	450,000	0	0	Abandoned.
South Frances ... ..	7,713	0	0	183,726	16	0	8,432
Dolcoath ... ..	46,186	7	6	285,147	0	0	116,350
Botallack... ..	18,250	0	0	96,150	0	0	24,000
South Caradon ... ..	640	0	0	247,552	0	0	256,000
Devon Great Consols ... ..	1,024	0	0	104,540	0	0	614,400
Great Wheal Vor ... ..	236,320	0	0	41,208	6	0	194,964
* Wheal Friendship ... ..	20,480	0	0	303,616	0	0	...
Carnbrea ... ..	15,000	0	0	280,500	0	0	20,000
Providence ... ..	11,568	13	4	86,520	0	0	35,840
Fowey Consols ... ..	4,300	10	0	38,998	5	0	...
Basset ... ..	2,624	0	0	312,064	0	0	51,200
East Wheal Rose ... ..	6,400	0	0	300,672	0	0	Abandoned.
West Chiverton ... ..	Nil.			16,500	0	0	231,000
St. Ives Consols ... ..	7,520	0	0	461,070	0	0	28,200
Wheal Mary ... ..	8,612	10	0	28,812	10	0	...
Wheal Owles ... ..	5,600	0	0	19,454	0	0	...
Wheal Seton ... ..	23,166	0	0	79,893	0	0	79,200
West Seton ... ..	19,000	0	0	173,200	0	0	80,000
East Basset ... ..	15,104	0	0	64,512	0	0	10,240
West Basset ... ..	9,000	0	0	157,350	0	0	...
Wheal Trelawney ... ..	6,084	0	0	54,080	0	0	18,720
Wheal Mary Ann ... ..	8,192	0	0	61,312	0	0	13,312
East Pool... ..	2,104	0	0	47,296	0	0	...

I have in the body of this work introduced various statements, reports, and tabular accounts for the information of my constituents; and in addition to these, I have prepared, and appended to the work, a statement, in which are enumerated a list of the

dividend paying mines now at work in the two counties, with the ore raised by each.

Finally, in taking leave of my readers in these concluding observations, I would remind them that it is not possible in the whole range of human enterprise to invest in anything more useful to the community at large and the permanent advancement of the country. The progress of mining has in a remarkable way been united with the progress of civilisation. It enriches the nation, and teaches Englishmen to prize and to rely upon the great industrial resources of their own land. The men brought up to the pursuit are made brave, hardy, laborious, self-reliant, and intelligent, and taught to value the blessing and necessity of order, obedience, and peace. Industry was not made a law of human existence merely that men might subsist or grow rich, but that the various sources, forms, and directions of labour might tell upon man's moral nature and social condition, and so aid the progress of civilisation.

Mining, if it tend to create or foster the faculties and characteristics above stated, and for which in these days it gets credit, must be especially beneficial to "the land we live in," and a blessing to mankind. It is pleasant to feel that while engaged in a pursuit by which we may realise the fruits of toil and capital, we are also promoting the success of an occupation which bears in its train so many moral and social advantages, and which has so prominent a part in advancing the grand era of civilisation; when the noise of battle shall no more startle the earth, nor its sanguinary sacrifices leave their stain; when men shall wear wreaths which bear no blood drop, but are gathered amidst the doings of mercy and are entwined with the olive of peace.



mine.

NOTE IV

THE G. C. C. C.

## APPENDIX.

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### CORNELLOE,

in the parish of Zennor, Cornwall, in 3,000 shares. *Purser*, Mr. J. W. Field, Marazion. *Manager*, Captain Paul Roach. *Mineral-Owners*, Duke of Cornwall and another. Dues, 1-20th. Depth of adit, 30 fathoms; depth under adit, 30 fathoms. Pumping-engine, hydraulic. Stamping (12 heads), and winding, performed by a water-wheel. 14 men, 2 females, and 2 boys employed. Rocks, granite and slate.

The works were begun in 1862. Prospects good.

### WHEAL MARY,

in Lelant, Cornwall. *Pursers*, Messrs. R. R. Michell and T. W. Field Marazion. *Manager*, Captain Thomas Roberts. *Landowners* Messrs. Tyringham, Tremayne, Rodd, Stephens, and Williams. Dues, 1-18th. Depth of adit, 22 fathoms; depth under adit, 170 fathoms. Rock, granite. 118 men, 23 females, and 14 boys employed. Pumping-engines, 22 and 24-inch. Winding-engines, 18 and 20-inch. Three stamping-mills worked by water-wheels.

#### MINERAL SOLD IN 1864.

Tons. cwt. qrs. lbs.							
					£	s.	d.
Black tin	...	125	12	0	26	...	for 7,801 13 8

This mine was set to work in 1821. For many years, until lately, there were regular dividends of profit; but last year there was a small loss on the working. When the price of tin rises to its former acme, profits will, probably, be resumed. I believe that Mr. R. R. Michell is the owner of the greater part of the mine.



## ST. DAY UNITED,

in Gwennap, Cornwall, *Secretary*, Mr. Edward King, 22a, Austin Friars, London. *Local Purser*, Mr. Michell, Scorrier, *Manager*, Captain Joseph Cock, Scorrier. *Landowners*, Lords of St. Day, viz.: Tremayne, Stephens, Rodd, Champernowne, Esquires, and others. Dues, 1-24th. Depth of adit, 50 fathoms. Depth under it, 194 fathoms. Rock, granite and clay-slate. 292 men, 76 females, and 185 boys; (total, 553) employed. Pumping engines, 85, 80, and 76-inches respectively. Stamping engine, 36-inch. Winding engines, 26, 22, and 18-inch (respectively). Winding and crushing engine, 26-inch. Winding and capstan engine, 20-inch.

## MINERALS SOLD IN 1864.

		Tons	cwt.	qrs.	lbs.		£	s.	d.
Copper ore	...	384	20	2	0	...	1460	4	3
Black tin	...	396	1	3	28	...	22189	12	9
Arsenic	...	30	0	0	0	...	80	0	0
							<hr/> £23,679 17 0 <hr/>		

Part of this mine, under the name of "Poldice," has worked, without intermission, from time immemorial, although at a considerable loss. But the other parts of the concern have yielded very large profits, viz.:—Wheal Unity gave about £360,000 profit. Old Wheal Jewel (Wheal Quick), gave large profits; also Wheal Gorland and Wheal Maiden, all these under former Companies, managed by Messrs. Williams, of Scorrier. At present the returns and the expenditure are nearly balanced.

## CONDURROW,

in the parish of Camborne, Cornwall, in 256 shares. *Purser and Manager*, Mr. Reginald Grylls, Redruth. *Chief Agent*, Captain John Moyle, Camborne, *Landowner*, Mrs. Pendarves. Adit, 50 fathoms deep; bottom of mine, 220 fathoms under adit. Rock, granite. 250 men, 60 females, and 70 boys employed. Pumping engine, 36-inch. Stamping engine, 30-inch. Winding engines, 22 and 20-inches.

This mine was first worked many years ago, but the present working dates back to 1844 only. Captain Nicholas Vivian, of

Camborne, formed the company, and was purser and manager till about 4 years ago, when he resigned his position because the Company would not let him exercise his judgment in the working. Since then, about £10,000 has been expended in stamping and other machinery, more particularly for the return of tin, which, as in the other neighbouring mines, has increased in quantity, while copper has decreased. Now that the plant is in perfect order, and a large amount of tin ground open, it is fully expected that no further calls will be required, but that dividends will be declared ere long.

### NORTH SHEPHERDS,

in the Parish of Newlyn, Cornwall, in 2,000 shares. *Secretary*, Mr. E. J. Cole, 2, New Broad Street, London, E.C. *Manager and Local Purser*, Captain T. Richards, Redruth. *Landowner*, C. H. T. Hawkins, Esq. Dues, 1-18th. 40 men and 2 females employed. Depth of adit, 20 fathoms. Depth under adit, 30 fathoms. Rock, clay-slate. Pumping engine, 36-inch. No returns in 1864.

This mine is adjacent to, and north of the celebrated Shepherd silver-lead mine, and north-west of East Wheal Rose, so well known for its large dividends of profit. It is in a lead-producing stratum, and probably, after a little further development, will yield something towards the cost of exploration.

### CREEGBRAWS & PENKIVELL UNITED.

in the parish of Kenwyn, Cornwall. *Purser*, Mr. W. H. Tregoning, Gwennap. *Managing Agent*, Captain John Blight, at the mine. *Landowner*, Viscount Falmouth. Adit, 50 fathoms deep.

The present works are at and above the 36 fathoms level, under adit, from which the water is drained by St. Day United engines, for which a heavy charge is made. In this mine there is no steam power employed. I understand that the tin returned nearly pays the current cost. The mine has been worked hundreds of years; but sometimes very few men have been employed. A heavy loss has been sustained by working here within the last 30 years.

### CRANE.

#### MINERAL SOLD IN 1864.

		Tons cwt. qrs. lbs.				£ s. d.			
Copper	...	111	10	3	0	for ..	1,041	11	9

## GUNNISLAKE (CLITTERS).

## MINERALS SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper	...	...	229	4	2	0	for	...	1,463	3	1
Tin	...	...	38	2	1	6	,,	...	2,082	15	2
									<u>£3,545 18 8</u>		

## WHEAL ELIZA CONSOLS.

## MINERALS SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Tin	...	...	147	12	1	2	for	...	9,187	0	7
Copper	...	...	25	18	0	0	,,	...	216	11	0
									<u>£9,403 11 7</u>		

## WHEAL ARTHUR.

## MINERAL SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper	...	...	306	8	2	0	for	...	869	7	2

## CHARLESTOWN UNITED.

## MINERAL SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Tin	...	...	382	18	2	13	for	...	24,118	13	1

## CARNYORTH.

## MINERAL SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Tin	...	...	70	5	2	15	for	...	4,714	15	3

## SOUTH CROFTY.

## MINERALS SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Copper	...	...	627	7	2	0	for	...	2,190	16	3
Tin	...	...	1	6	0	22	,,	...	77	5	6
Tinstuff	...	...	...	...	...	...	...	...	827	0	9
									<u>£3,095 2 6</u>		

## EAST WHEAL JANE.

## MINERAL SOLD IN 1864.

			Tons cwt. qrs. lbs.					£	s.	d.
Lead	...	...	48	5	3	0	for	...	641	13 5

## WHEAL HEARLE.

## MINERAL SOLD IN 1864.

			Tons cwt. qrs. lbs.					£	s.	d.
Tin (3 quarters)	...	...	42	13	1	2	for	...	2,606	19 9

## WHEAL JANE (KEA).

## MINERALS SOLD IN 1864.

			Tons cwt. qrs. lbs.					£	s.	d.
Copper	...	...	3	3	0	0	"	...	17	9 8
Oxide of Iron	...	...	19	19	2	0	"	...	4	19 7
Tin	...	...	3	10	2	17	"	...	199	5 2
Mundic	...	...	742	11	1	0	"	...	693	14 10
Blende	...	...	28	10	3	0	"	...	31	5 8
Gossans	...	...	70	20	0	0	"	...	57	7 9
Lead	...	...	24	19	3	0	"	...	490	14 7
Tinstuff	...	...	...	...	...	...	"	...	7,448	1 10

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£8,942 19 1

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## WEST JANE.

## MINERALS SOLD IN 1864.

			Tons cwt. qrs. lbs.					£	s.	d.
Tin	...	...	37	1	2	5	"	...	2,597	1 2
Tinstuff	...	...	...	...	...	...	"	...	2,622	7 8
Mundic	...	...	...	...	...	...	"	...	524	6 3
Blende	...	...	...	...	...	...	"	...	24	9 8
Arsenic	...	...	...	...	...	...	"	...	38	15 1

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£5,806 19 10

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## PHENIX.

## MINERALS SOLD IN 1864.

			Tons cwt. qrs. lbs.					£	s.	d.
Copper	...	...	5,099	7	2	0	for	...	17,626	7 5
Tin	...	...	131	15	3	10	"	...	7,317	11 8

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£24,943 19 1

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## WEST GREAT WORK.

## MINERAL SOLD IN 1864.

						£	s.	d.
Tinstuff	...	...	...	...	...	866	9	4

## WEST CONDURROW.

## MINERAL SOLD IN 1864.

						£	s.	d.
From June to December	...	...	...	...	...	605	3	9

## NANJILES.

## MINERALS SOLD IN 1864.

							£	s.	d.
		Tons.	cwt.	qrs.	lbs.				
Copper	...	...	399	9	3	0	for	...	1,930 19 6
Tinstuff	...	...	...	...	...	...	...	...	381 1 0
							<hr/>		
							£2,262 0 6		
							<hr/>		

## WHEAL UNION.

## MINERAL SOLD IN 1864.

							£	s.	d.
			Cwt.	qrs.	lbs.				
Tin	...	...	18	1	24	for	...	57	19 4

## TRELYON CONSOLS.

## MINERAL SOLD IN 1864.

							£	s.	d.
			Tons	cwt.	qrs.	lbs.			
Tin	...	...	58	10	1	6	for	...	3,698 17 7

## TRENCROM.

## MINERAL SOLD IN 1864.

							£	s.	d.
			Tons	cwt.	qrs.	lbs.			
Tin	...	...	118	14	0	3	for	...	6,612 11 0

## WHEAL MARGERY.

## MINERALS SOLD IN 1864.

							£	s.	d.
			Tons	cwt.	qrs.	lbs.			
Copper	...	...	1,948	3	1	0	for	...	7,966 6 7
Tin	...	...	3	13	3	7	„	...	213 13 6
							<hr/>		
							£8,180 0 1		
							<hr/>		

## TRELOWETH.

## MINERAL SOLD IN 1864.

								£	s.	d.
Copper	...	...	739	3	0	0	for	...	4,183	1 11

## PENDEEN.

## MINERALS SOLD IN 1864.

								£	s.	d.
Copper	...	...	267	3	0	0	for	...	713	9 1
Tin ( $\frac{1}{2}$ year)	...	...	57	16	0	0	,,	...	3,766	18 0
									<u>£4480</u>	<u>7 1</u>

## NORTH LEVANT.

## MINERAL SOLD IN 1864.

								£	s.	d.
Tin	...	...	34	19	3	18	,,	...	2,208	0 0

## SOUTH FRANCES.

## MINERALS SOLD IN 1864.

								£	s.	d.
Copper	...	...	1,130	8	2	0	for	...	6,838	14 6
Tin	...	...	40	17	1	13	,,	...	2,860	5 9
									<u>£9,699</u>	<u>0 3</u>

## PENHALLS.

## MINERAL SOLD IN 1864.

								£	s.	d.
Tin	...	...	71	14	2	7	for	...	4,599	2 6

## NEW CHIVERTON.

## MINERALS SOLD IN 1864.

								£	s.	d.
Lead	...	...	6	0	0	0	for	...	84	10 0
Blende	...	...	18	18	0	0	,,	...	41	4 5
									<u>£125</u>	<u>14 5</u>

## NORTH CHIVERTON.

## MINERALS SOLD IN 1864.

			Tons	cwt.	qrs.	lbs.			£	s.	d.
Lead	...	...	5	11	0	0	for	...	103	0	0
Blende	...	...	97	5	3	0	„	...	441	3	0
									<hr/>		
									£544	3	0
									<hr/>		

## WHEAL ANNA.

## MINERALS SOLD IN 1864.

			Tons	cwts.	qrs.	lbs.			£	s.	d.
Copper ore	...	...	216	11	0	0	...	for	...	1,106	8 5
Black tin	...	...	15	10	2	18	...	„	...	950	14 6
Lead	...	...	3	11	0	0	...	„	...	49	8 3
									<hr/>		
									£2,106	11	2
									<hr/>		

## POLBERRO.

## MINERAL SOLD IN 1864.

			Tons	cwts.	qrs.	lbs.			£	s.	d.
Black tin	...	...	175	4	2	14	...	for	...	11,098	7 10

## POLBREEN.

## MINERAL SOLD IN 1864.

			Tons	cwts.	qrs.	lbs.			£	s.	d.
Black tin	...	...	28	8	2	3	...	for	...	1,843	12 11

## CALVADNACK.

## MINERAL SOLD IN 1864.

			Tons	cwts.	qrs.	lbs.			£	s.	d.
Black tin	...	...	109	0	2	24	...	for	...	6,693	13 11

## • GURLYN.

## MINERALS SOLD IN 1864.

			Tons	cwts.	qrs.	lbs.			£	s.	d.
Black tin	...	...	34	5	1	10	}	for	...	2,418	12 3
Copper ore	...	...	50	2	2	0					



## LEEDS AND ST. AUBYN.

## MINERAL SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Black tin ...	51	9	13	3 ...	for ...	3,267	5	6

## CLIFFORD AMALGAMATED.

## MINERAL SOLD IN 1864.

	Tons				£	s.	d.
Copper ore ...	15,180	...		for ...	79,702	9	6

## WHEAL FALMOUTH AND SPERRIES.

## MINERALS SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Copper ore ...	167	17	2	0 ...	for ...	407	6	10
Tin stuff ...	18	5	0	0 ...	" ...	4	6	6
Lead ore ...	7	2	2	0 ...	" ...	127	9	4
Blende ...	60	7	2	0 ...	" ...	62	5	6
Silver ore ...	600	13	2	0 ...	" ...	494	6	8
Mundic ...	5,035	4	0	0 ...	" ...	4,807	4	0
						<u>£5,902 18 10</u>		

## TREVAUNANCE.

## MINERAL SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Black tin ...	15	10	0	5 ...	for ...	1,019	6	3

## WEST CHIVERTON.

## MINERALS SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Lead ore ...	1,020	0	1	0 ...	for ...	18,940	17	2
Blende ...	164	17	1	0 ...	" ...	471	18	10
						<u>£19,412 16 0</u>		

## WHEAL FRIENDLY.

## MINERAL SOLD IN 1864.

	Tons	cwts.	qrs.	lbs.		£	s.	d.
Black tin ...	30	6	2	17 ...	for ...	1,778	13	8

## TREWORLIS.

## MINERALS SOLD IN 1864.

		Tons	cwts.	qrs.	lbs.			£	s.	d.
Tin	...	16	8	3	24	...	for	...	1,064	10 0
Copper ore	...	22	4	0	0	...	,,	...	102	12 7
									<u>£1,167</u>	<u>2 7</u>

## WHEAL KITTY (ST. AGNES).

## MINERALS SOLD IN 1864.

								£	s.	d.
Copper	...	...	...	...	...	...	...	220	0	0
Tin	...	...	...	...	...	...	...	15,868	0	0
									<u>£16,088</u>	<u>0 0</u>

## SOUTH CARADON.

## MINERAL SOLD IN 1864.

			Tons					£	s.	d.
Copper ore	...	...	5,770	for	...	...	...	58,904	11	10

## TINCROFT.

## MINERALS SOLD IN 1864.

								£	s.	d.
Copper	...	...	...	...	...	...	...	1,819	0	0
Tin	...	...	...	...	...	...	...	29,772	0	0
									<u>£31,591</u>	<u>0 0</u>

## WEST SETON.

## MINERAL SOLD IN 1864.

			Tons					£	s.	d.
Copper	...	...	5,412	for	...	...	...	31,189	10	0

I have confined myself in this volume to the mines of Cornwall, reserving my statements and observations connected with

those of Devon for a separate volume, so that the reader should not find a single volume cumbersome and inconvenient.

It was required by local relations and for the sake of completeness that two of the Devon mines should be noticed in this volume, and for a similar reason I have glanced at the geological and topographical character of the Cornish borders of Devonshire.

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#### ERRATA.

LEVANT, p. 18—Read "Minerals Sold in 1864," and not 1863.

PROVIDENCE, p. 20—Dividends for 1863, read £5,320; and for 1864, £4,480.

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THE  
MINES OF CORNWALL AND DEVON;  
STATISTICS AND OBSERVATIONS.

BY

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MR. SPARGO is enabled, through his long experience as a Practical Miner, and by his monthly visits to Cornwall and Devon, to afford accurate information as to the position and prospects of the various mines in those Counties.

He will at all times give the best advice as to Investment in Mines, and will, if necessary, inspect them himself, as, in all cases, he wishes to be guided by the intrinsic value of the property, totally irrespective of the rise or fall of Shares in the London Mining Market.

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